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IX.—*Notes on a Journey from Constantinople, by Heraclea, to Angora, in the Autumn of 1838.* By WILLIAM AINSWORTH, Esq., in charge of an expedition to Kurdistán.

*Angora, 24th December, 1838.*

IN consequence of plague on board the steamer plying between Constantinople and Trebizond, and of the temporary interruption in the navigation of that part of the Black Sea, our party was reduced to the necessity of taking the land route through Anatolia, yet we still determined to fulfil as far as possible the instructions of the Geographical Society, as well as those of the Society for Promoting Christian Knowledge, who have so liberally supplied us with the means of travelling, to obtain a better acquaintance with the course of the Halys, and more particularly to explore the almost unknown districts between Ereglí and Angora. With these intentions, and in order to follow a less-beaten track, we endeavoured to procure horses for the purpose of proceeding by the site of the temple of Jupiter and the promontory of Kirpeh, to the mouth of the Sangarius, but the forests and the rocks on the sea-shore were declared by our guides to be impassable, and it was not till after we had arrived at Dúzhah that we were enabled to cross the mountains named Yáílí Tágh, and reach the sea-coast, in the neighbourhood of the river of Uskúb.

Our party, consisting of Mr. Russell, Mr. Rasám, and myself, left Scútari on the morning of Tuesday, September 18th, 1838, and on the same evening reached Kartál, a village on the shores of the Sea of Mármora; passing on the road Mount Aidós and the hills of Yakájik, composed of sandstone and superimposed limestone, and associated at Scútari with rocks of the felspathopyroxenic series. Kartál is surrounded by gardens, which supply the market of the capital with bámiyahs (*hibiscus esculentus*), tomatos (*solanum lycopersicum*), capsicums, onions, and other vegetables, besides grapes and peaches.

Sept. 19.—From Kartál to Pendík (Pantichium), a fishing village, chiefly inhabited by Greeks. Near it are the remains of a castle, in part constructed out of the ruins of a still more ancient edifice. Geibúzeh (Geybúzeh), the ancient Dacibysa (?), is now a large village, with a handsome mosque, surrounded by cypress groves. It is built upon a hill, composed to the west of trap rocks, to the east of cretaceous limestones. At the khán or resting-place, a sarcophagus in white marble serves as a reservoir for water, and numerous other fragmentary remains denote the antiquity of the site. The cretaceous rocks constitute a hilly country, from hence to Tavshánjik, a pretty village surrounded by gardens and groves of cherry-trees or vineyards, which extend along the shores to Harakah, a khán and ferry to the opposite



side of the gulf of Astacus. The ruins of a castle upon an adjacent hill, and solid walls near the sea-side, attest an ancient site. The ferry on the gulf of Astacus existed in former times between Libyssa and Pronectus. Libyssa, in Rennell identified with Cshebissa (*i. e.*, Jebisah, a name not now known by the natives)\*, is in Colonel Leake's map identified with Maldysem. At present there are two villages on the N. side of the gulf, from whence the passage across is made; the one Tavshánjik, the other Harakah, which latter appears from this circumstance, and from its ruins, to be the ancient Libyssa.

Sept. 20.—The hilly country from Harakah, as far as to Izmíd,† is composed of sandstones and limestones. On this road a mound of crumbled ruins, an ancient cornice, and two columns, converted into a gateway, are all that remains of Brunga of the Jerusalem Itinerary. The road from Scútari (Uskudár) to Izmíd, where we arrived this evening, is now measured off as far as Itinerary distances are concerned; and painted posts are put up at every  $\frac{1}{4}$  of an hour of a horse's walking pace, or about 3 miles to an hour. The distance from Kartál to Geïbúzeh is 20 posts or 5 hours; from Geïbúzeh to Harakah, 18 posts or  $4\frac{1}{2}$  hours, and from Harakah to Izmíd, 20 posts or 5 hours, making a total of  $18\frac{1}{2}$  hours or  $55\frac{1}{2}$  British miles, by the circuitous road, which is about the mean of the three ancient sets of Itinerary or 62 Roman miles, and not far from Rennell's deduction from the reports of seven different travellers compared with one another, which gave as a result 57 ordinary miles.

Sept. 21.—Nicomedia, so long a capital city, has been truly said to occupy a most imperial situation, both with respect to the scenery about it and its political and commercial advantages. Pliny the younger was prefect at Nicomedia, and the city of the kings of Bithynia was the residence of Diocletian and the historian. Its modern condition has been too often described to need any details here, but some travellers have almost denied the existence of any remains of ancient times, yet there is still a castellated building, and the tombstone carvers' yards are filled with fragments of antiquity. Lat. by two mer. alts. of the sun  $40^{\circ} 47' 40''$  N.; long. by chronometers, by three sets of altitudes,  $29^{\circ} 53' 30''$  E.

Sept. 22.—The country to the N. and N.E. of Izmíd, and between it and the Black Sea, is hilly and covered with wood, forming part of the forests designated by the Turks as the Agháj Denizî,‡ or Ocean of trees. It is said to be crossed in that di-

\* Jebiseh is probably the Arabic name of Geybúzeh (pronounced Geïbizéh), and answers to the ancient Dacibyza.—F. S.

† Izmíd is a colloquial contraction for Iznikmíd (from *Eis Nisimúndēia*).—F. S.

‡ Jihán numá, p. 666.—F. S.

rection by no great road, which information must be received with great caution, but the *súrujî's* (muleteers) would not proceed in that line. The mountains of the sky (*Gök Tágh*), composed of limestone reposing on, and associated with, mica and chlorite schists, gneiss, and quartz, bound the Gulf of Astacus to the S., and extend eastward by *Şabánjah* to the *Karám 'Alí Tágh*, S. of *Khandak* 7 miles, and by the latter to the *Bóli Tágh*, S. of the plain of *Dúzchah*; constituting portions of the Bithynian Olympus; they are uniformly covered in their northern divisions with forests, with the exception of one culminating point, bearing S.  $23^{\circ}$  E. of *Khandak*, and rather in the rear of the *Karám 'Alí Tágh*, whose bare summit is said to expose the ruins of an old castle. The hills of *Khandak* unite Olympus with the southern ranges of hills named the *Yailá Tágh*,\* and these are also covered with forest-trees from their northern acclivities to their abutments on the Black Sea.

The country at the head of the Gulf of Astacus and between the *Gök Tágh* and the southern hilly districts, is at first low and level, watered by the *Kızıl Irmák*, and cultivated with rice and melons. Further inland are pastures diversified by hedges covered with wild vines, hops, and virgin's bower (*clematis cirrhosa*), the luxuriant creepers of these climates. On approaching the lake of *Şabánjah*, the northern and southern hills which enclose it prolong their rocky declivities into the plain, which is thus raised above its ordinary level, and is covered at first with a low and shrubby vegetation of evergreen oaks, &c., which soon, however, attain the magnitude and growth of forest trees. I have been thus minute in describing the features of this portion of Bithynia, because projects have often been made to construct a canal between that lake and the Gulf of Astacus. The younger Pliny, in a letter to the Emperor Trajan, proposed to convey a canal along this line, where he said there were already indications of a previous attempt to dig one; but there are at present no remains of such a canal. Plans for the same purpose, of the same nature, have been formed by the Turks in modern times; one in 1490 is noticed by Rennell. (Vol. ii. p. 104.)† Pliny reports that the difference of the levels between the lake *Sophon* (*Şabánjah*) and the Gulf of *Nicomedia* was 40 cubits, or about 60 feet, and the Turkish account is 30 *lirás* (cubits), also about 60 feet, and the lake was said to be 35 feet above the *Sangarius*.

The lake of *Şabánjah*, the ancient *Sophon*, is upwards of 8 miles in length, and of an oval form. At some seasons of the year it is said to overflow, and to pour its waters into the Gulf of

\* Summer-quarters mountains.

† Others in 1505 and 1563 are mentioned by the Turkish historians Hammer, *Reise nach Bressa*, s. 171.—F. S.

Astacus; but there is a constant communication between it and the Sangarius by a rivulet called Killis. The lake has few pretensions to beauty, the hills to the north are low, there is little woodland, no villages, nor even any rocky scenery; but to the S. the woods are of noble growth and extent, and rise to the summits of the mountains, at least 1000 feet above the lake.

Sabánjah is a mere travelling station, full of coffee-houses and stables, of which the inhabitants vary every day, with about 500 houses and two mosques. The Greek Patriarch of Nicomedia claimed for this spot (which has now only a few broken columns and scattered fragments of ancient times) the name of Helenopolis. Colonel Leake marks it as Sophon, and Rennell as Lateæ, which latter in the Theodosian tables is placed 24 m. p. from Nicomedia, corresponding with the distance of Sabánjah from the same place.

*Sept. 23.*—The Theodosian or Peutingerian tables have a site marked as Demetriu or Demetrius, 13 m. p. from Lateæ. There are in the present day, at a corresponding distance from Sabánjah, the almost perfect remains of a handsome bridge of seven arches, 1087 feet in length, and carried over an old bed of the Sangarius, from which a small stream still finds its way along the same valley to the N. A plan of this bridge was accurately sketched by Mr. Russell; its name would appear to connect it with that of the son of Antigonus. As a remote proof that this was the old bed of the Sangarius, Mr. Rasám obtained from the natives a fragment of a tradition in verse, which relates that a dervish, or holy man, coming to the bridge, was required to pay, which he refused to do, alleging that his avocations forbade his carrying money about. The passage of the bridge was not however allowed, and in his anger the dervish prayed that God would change the bed of the river, that toll might not any longer be collected at the bridge; and it appears that his prayers were heard. The bridge is called by the people of the country Mahámah, and a road passing over it takes a southerly direction, being probably one of the Roman roads to Ancyra.

From the old bridge we proceeded to the modern one, a wooden structure carried over the river Saķáriyyah, where it is 372 feet wide, with an average depth of 2 feet, and a rate of about 2 miles an hour. From the Saķáriyyah, the road is carried over marshy land, which I knew by experience to be scarcely passable at some seasons of the year, but now tolerably dry: a wooden causeway, like an American corduroy, is carried for nearly a mile over this marsh. At a guard-house further on we found the residents suffering severely from malaria. Beyond this point the country improved, and low hills of trap-rocks led the way to the wooded hills of Khandak, which we reached the same evening.

*Sept. 24.*—Khandak \* is a posting village in the forest, and contains about 200 houses. For the supply of the post, Scútari has 100 horses, Şabánjah 150, and Khandak 200. There are few remains of antiquity, but occasionally fragments of columns and of hewn stones are seen, more particularly in the burial-ground of the town. Khandak is identified by Colonel Leake with Latania. There was much thunder and rain during this day.

*Sept. 25.*—Left Khandak by a circuitous route through forests of beech and oak growing upon rocks. After a ride of nearly 4 hours we came to the open plain of Dúzcáh, remarkable for its picturesque beauty. It is itself very level, traversed in an irregular manner by the Mílán† river, which forms the lake of Ak-Tení Gölí,‡ in the S.E. corner of the plain. It is surrounded by wooded mountains, of which the Bólí Tágh, to the S., attains an elevation by trigonometrical admeasurement of 1490 feet above the plain, and the Yáílá Tagh, to the N., is by barometer 1500 feet. To the W. are two openings with lower hills, and to the N. above Uskúb, vulgo Eskí Bágh, are some hills of minor elevation. The plain is everywhere verdant with green sward, trees, or shrubs, while the surrounding heights are covered from foot to summit with continuous forests, the different shades of which have a very pleasing effect; add to this that the whole is a plain of about 12 miles in length and 8 in width, which can be taken in at one view from almost any point, so as greatly to enhance the beauty of the scene.

In travelling from Dúzcáh to Khandak, in 1837, the river of Mílán was forded nearly to the W.N.W., but at the present season, the river being flooded, we approached the lake, crossed a deep cut, with water scarcely moving, to the N.W., and banks clad with a deep and rank vegetation, while a little further was the river of Mílán flowing with a quick current to the S.E.; we kept along its banks half an hour to the N., then turned E. to Dúzcáh: it rained hard during all the latter part of the journey.

The number of columns, cornices, and fragments of Byzantine architecture in the burial-ground appear as evidences of some former splendour in this small station, identified by geographers with Duseprum, a site without a history: one capital of a column, forming a head to a well near the khán, was ornamented with well-sculptured doves encircled by wreaths. At present Dúzcáh contains scarcely more than 20 houses.

\* A foss or ditch, in Arabic.—F. S.

† Mílán súi (Mílán water), Jihán-Numá, p. 650, takes its name from the Mílán, a rocky valley, where it rises (H. p. 647).—F. S.

‡ The Mílán river passes through the lake of Ifnánlí (J. N., p. 653), called If-nán-lú-göl.

Sept. 26.—The town or village of Uskúb, vulgo Eskí Bágh, bore from Dúzhah N. 5° E. at the foot of the hills about 3 miles distant, but our route to it was, on account of the marshy character of the plain, very circuitous, and we had to ford the Milán, flowing westwards. We found this place to have been once the site of a considerable town, part of which was contained within a strong circular wall round the hill, and still in tolerable preservation, while the remainder was *extra muros*: to the S. and upon the hill was also an aqueduct, but of a doubtful era. The modern village is for the most part within the old walls, and many of the streets are approached by narrow gateways, evidently belonging to an ancient style of building; the upper slab of one was 12 feet long and 8 by 3 in thickness.

We here copied several inscriptions: they appear to be only sepulchral. One inscription, however, was copied by Mr. Russell from a solid mass of stone, at a station where excavations had been carried on in some sort of outwork or temple: this appeared to have been the basis of a statue. Although no satisfactory evi-

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Α Ν Ε Σ Τ Η Σ Ε

dence could be obtained from these inscriptions, still the position of the town near the banks of the Hypius river and at the foot of the Mons Hypius (Yáilá Tágh), will probably satisfy geographers of the identity of this site with the ancient Prusa ad Hypium. Rennell had already placed this city at a situation which he designates as Uskúb, from Eskúb, vulgarly called Bagh, as the district of Akchah Shehr is called *Uskúbli Kázá-sí*: this Uskúb is, however, on the banks of a lake at some distance from Duseprum.

On leaving Prusa ad Hypium we found further ruins in a very dilapidated state about a mile up the banks of a rivulet which flowed from the mountains higher up. This forest-clad chain we now approached, and began a long ascent, rendered the more difficult by the muddy state of the roads after the late rains. The forests consisted almost entirely of beech, with some oak and pine. The barometer at the summit level indicated a height of 1350 feet. The name of this chain, which extends to the E. almost uninterruptedly as far as to the Elkás Tágh, has been variously written in the maps Tshila, Tcheleh, Tshela, and Chila.\* The word Yáilá or Yáilak signifies summer quarters. This phrase, which is applicable to any mountain pasture at a considerable elevation, is very common in Asia Minor, and has

\* Chileh tághí, the mountains of Chilah. J. N., p. 653.—F. S.

been consequently mistaken by modern geographers for a generic term for any chain of mountains.

It is very interesting while traversing the forests of Bithynia to observe in practice at the present day the very same usages as were noticed by Xenophon centuries ago, trees being still, as then, fired at their base and then felled, while small waggons yoked with male buffaloes came from the shore to carry away the wood. There are no villages, and the driver sleeps in his cloak every night till his work is done; and the carts are so constructed that their slope becomes excessive without causing any danger of an overthrow: the wood is used for ship-building, partly at Aḳchah Shehr and partly at Constantinople.

It had been some time dark before we began to ford the Uskúblí Kázá-sí chái, which we did two or three times previous to reaching the port, without a harbour, designated as "Bay-stairs," Chuvállí Iskeleh-sí, and consisting of a long range of wooden houses with a beach, upon which, in fair weather, the small coasting vessels are drawn up. A mile beyond this to the W. we came to Aḳchah Shehr, called in the maps Aḳ Hissar, where we were detained some time by bad weather.

*Sept. 27.*—Aḳchah Shehr,\* "money town" (or whitish city), is now but a poor village of about 20 houses, where they were building one brig at the time of our visit, and one small Greek boat from Várnah, loaded with dried beef, was drawn up upon the shore. Great quantities of *Momordica elaterium*† grew upon the beach, and the inhabitants, which is scarcely credible, were ignorant of the squirting power of the seed vessel. It rained hard with much wind also all this and the following day. The journey from Uskúb to Aḳchah Shehr occupied us 9 hours, travelling 27 miles by a circuitous route.

*Sept. 29.*—We took advantage of a momentary cessation of rain, after midday, to start along the coast, passing the river of Uskúblí Kázá-sí, 10 yards wide by 1 deep, but swollen, and doubtless a mere rivulet in spring, ascended a woody hill by a narrow pathway, where our horses stumbled and fell in the clayey soil; from thence we reached the valley of the Aḳ sú or white water, 13 yards wide by 1 deep. We stopped for the night at a poor village of 7 houses called Akóyah Kõi, and corrupted from Aḳ Qayá Kõi, "the white cliff village."

*Sept. 30.*—Started early in the morning, cloudy with rain and strong wind from the N.; ascent, as usual, up a forest-clad hill, with steep and slippery clayey road, and much obstructed by branches and climbing plants. Forded the river of Kójamán, about 13 yards wide by 1 deep, but swollen; crossed a small

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\* Or Shár. J, N., p. 654,

† Squirting cucumber.

stream and kept along the shore of the Black Sea. The long-continued northerly winds had caused much more sea than usual at the foot of the cliffs, which, combined with the heavy swell, rendered the road at times almost impassable; and after an ineffectual attempt, attended with no little risk, to proceed along shore and also to pass over the cliffs, we were compelled to return to Ak kayá köi, where we remained the following day till the weather moderated: latitude by meridian altitude of sun  $41^{\circ} 4' N$ .

The rocks in this district consist of limestone shales, argillaceous limestone in thin beds, and of altered rocks in nearly vertical or in curved and contorted strata. The chief varieties are iron-shot, calcareous, and argillaceo-calcareous beds; blue and black carburetted limestone shale with Lydian stone, veins of calcareous spar, and some clay iron ore.

After passing the summit of the Yailá Tágh an evident change takes place in the character of the vegetation; the underwood of brambles, briars, and fern, is replaced by rhododendrons, olean-der, myrtle, box, and, in flower even at this late season, *daphne*, *vaccinium*, and *cistus*; nearer to the sea heaths and fern became abundant: the number of species of forest trees was considerable, and among them the chesnut was now frequent.

The Mariandyni possessed in ancient times the coast between the Sangarius and Heraclea, where the sea forms a deep bay terminated by the promontories of Kalpe or Kirpeh on one side, and that of Posideum, now Cape Bába,\* on the other. But if the country possessed the same characters as it does at the present day, which from other circumstances (for from the time of Xenophon to that of Jaubert, 1806, travellers have uniformly taken to sea at Ereglí) appears likely to have been the case, the population and the productiveness of the soil could never have been great.

Oct. 2.—The weather being calm we started early. The Kó-jamán river had fallen half a foot since the preceding day; the next river, the Kókalá, offered no impediment, and early in the afternoon we arrived at 'Aláblí, a port and fishing village with about 40 houses and a large government house, where we were received for the night. The Elæus is here a fine river, 17 yards wide and 1 deep, crossed by a wooden bridge, and increasing in width immediately below to upwards of 50 yards. Although 'Aláblí has been identified with the ancient Elæum, we could find no remains here, save one fragment of a marble column at the governor's house. The hills throughout this day's journey were, as usual, covered with wood, in which variety and beauty were

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\* From the tomb of Hájí Bába, a Turkish saint. J. N., p. 653.—F. S.

equally united; the rocks consisted of iron-shot trap and wacke, with altered rocks and limestone shales. On approaching 'Aláblí the country opened, and the prospect became more extensive; to the S. the high wooded mountains which form the continuation of the Yailá Tágh and bound the valley of Bólí to the N. terminate the view; to the E. a succession of hills and valleys rise up with the course of the Lycus as far as to the pine-clothed trachytic summits of the Kará Tágh; while to the N. the peninsula of the Posideum, with its lighthouse, and the walls and towers of Ereglí at the head of a calm bay, add to the variety and beauty of the scene.

*Oct. 3.*—As the Aghá could not provide us with horses, we took a boat to Ereglí, and starting early in the morning before the wind had got up, soon doubled the cape called Chingál Búrnú, composed of trap, limestone, and altered rocks; passed the mouth of the Kílíj or sword river, the ancient Lycus, and arrived at Ereglí a little after 10, A.M.

It appears from our observations that there are no less than six rivers, besides numerous rivulets, between Akchah Shehr and Ereglí. The first, commencing from the W., is the Uskúblí Şüi, or river of Prusias ad Hypium, and therefore the Hypius; but there is here a difficulty. In the plan of Dúz-chah we found the river of Prusias ad Hypium, known as the Mílán, and it is a considerable river flowing into the sea 3 hours W. of Akchah Shehr, while the modern river of Uskúb is little better than a rivulet. In the Theodosian tables and in Arrian's *Periplus*, after the Sangarius comes the Hypius (Mílán), and Rennell identifies Lilium with Chuvállí Iskeleh-sí. Probably the river of Prusias was the same as the Mílán; while the river now deriving its name from Uskúb is called so on account of its coming from the neighbourhood of that town and passing through its kádílik (Káza).\*

*Oct. 4.*—Heraclea, now Ereglí, as the Pontic Heraclea, “has filled the page of history by its grandeur and misfortunes; and its remains testify its former importance.”† The celebrated botanist, Tournefort, in his coasting voyage from Constantinople to Trebisonde, *passed a night* here, and, according to Gibbon, “His eye surveyed the present state, his reading collected the antiquities of the city.” We have the same authority for the

\* Mr. Ainsworth here examines with some detail the names of places as given in the Theodosian tables and Arrian's *Periplus*; but, as he well observes, it requires a far more careful examination of all the points in question than he had time for, and a reference to books which a traveller could not be expected to have with him, in order to arrive at any satisfactory conclusion on the subject. His discussion is therefore omitted, but the original MS. may be referred to in the library of the Society by those who feel interested in the subject.—Ed.

† Rennell. *Geo. of Western Asia*, vol. ii. p. 115.



existence of a separate history of Heraclea in the fragments of Memnon preserved by Photius, and the authority of Rennell for a description of the same place by the Academician Beauchamp in the *Mém. sur l'E'gypte*, tom. ii.

Heraclea was the port where the fleet of the Goths awaited the return of the second expedition, that in the time of Galienus ravaged Bithynia and Mysia; but that that expedition should in its retreat have been attended by a long train of waggons laden with spoils, will appear doubtful to those who know the character of the country; and Gibbon has also been misled by Chardin when he asserts that to navigate the Euxine after the month of September is esteemed by the modern Turks the most unquestionable instance of folly. There were upwards of 30 craft in the harbour while we were there, and some going out or coming in almost daily.

Ereglí, or Bender Ereglí (the port of Ereglí), contracted into Bendereglí, as the Turks have named the ancient Heraclea, contains 250 houses of Mohammedans, and 50 of Greek Christians, who have one church. Having staid here 4 days, we had time to make a plan of the ancient town, and copied an inscription in the Acropolis. The walls are now in a ruinous condition, and constructed chiefly of the remains of a former rampart. In that part which fronts the sea, and where there are remains of an outer as well as an inner wall still existing, huge blocks of basalt and limestone are piled upon one another, and intermingled with columns and fragments of Byzantine cornices and tablets, with sculptured crosses and Christian inscriptions. The castle upon the height is in a very ruinous condition. Only part of the ancient town was contained within the wall; the outer portion, where we found mosaic pavements, extended in the form of a triangle to a valley with a rivulet, now called Gaúr Irmák, and formerly a harbour, defended by towers, the ruins of which still exist. Was this the Metroum?—Of the Acherusian peninsula we could find no traces; it might have been a point where is now the inefficient Pharos of the Turks, a spot where a few villages are exempted from taxes upon the responsibility of keeping a light burning before mirrors darkened with accumulated soot.

The latitude of Ereglí by mean of three meridian altitudes of the sun we found to be  $41^{\circ} 15' 30''$  N.; its long., by mean of several observations,  $31^{\circ} 30'$  E.\*; variation of compass,  $9^{\circ}$  westerly; we observed also for dip and magnetic intensity.

The formations around Ereglí consist of igneous and sedimentary rocks. The first exhibit themselves chiefly at Chísh Depelh and Cape Bá bá, but also form the bases of the Heracleian rocks.

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\* Gaultier places the lighthouse in long.  $31^{\circ} 24' 56''$  E. of Greenwich,

They consist of basalts, dolerites, trap, and trap-conglomerate. The latter more particularly forms the foundation upon which the wall of Ereglí rests, and many of the huge stones which enter into its construction are formed of the same coarse material. To the S.W. of the town is a hill composed of argillaceous limestones of a pink yellow and yellowish-white colours. The pink variety is compact, fissile, and was much used as a building stone in the old city. To the north, and at the foot of the Acropolis, is a fountain of coarse gritty sandstone, very friable and passing, on the one hand, into a conglomerate, and on the other, into coarse limestone. It is shelly, and remarkable for containing littoral genera, such as patellum and astrea, and zoophytes of a similar character.

There is a general remark which might be ventured here, that it is impossible for the traveller to wander along the shores of the Black Sea without being struck with the rarity of shells common to the Mediterranean shores, as species of turbo, buccinum, purpura, solen, and mactra, replaced here by an occasional tellina, venus, or cardium, and the frequent occurrence of naiades belonging to the genus anodonta, while its waters abound in tunny and other sea-fish. In the gradual diminution in saltness which takes place in a Mediterranean sea like the Euxine, where the supply of fresh water is large and the waters of the sea itself as constantly going out, it would be curious in a geological point of view to ascertain whether the first forms of animal life affected by this new order of circumstances, be those which belong to the lower orders in the scale of creation? or whether their diminution in numbers be also indicative of a similar destruction of larger forms that haunt the deep waters?

Oct. 8.—We now turned our steps in an easterly direction up the course of the Lycus, and proceeded over low hills of sandstone and ironstone, by a road, part of which was paved with slabs from 2 ft. to 8 ft. in length, and from 1 ft. to 2 ft. in width. About  $5\frac{1}{2}$  miles from Ereglí we found on the roadside, and crowning an eminence, an old tomb of an oblong form built of large massive stones, and hollow within. It is called Kócháķ Tásh, “the hero’s stone.” Three miles beyond this, we came to where the Lycus forced its way through rocks of sandstone in thick strata, dipping north, and rising with rounded but nearly vertical walls, over which fall numerous streamlets of water from the well-wooded hills above. Immediately beyond the pass, a large mass of rock 90 ft. high, now overgrown with wood, except on its most precipitous parts, has become an island, and in the centre of the stream it forms a singular and picturesque object. It began to rain in the evening, and we only reached the valley of Yálchílar (masons), about 12 miles from Ereglí, not far from which, in the forest to

the N., are some cliffs apparently with hewn sepulchral caverns, now called Bál Kayá sí (honey-cliff), but which the bad weather prevented us from visiting.

Oct. 9.—It rained in torrents all night, and the Kiliḱ rose nearly 4 ft., overflowing great part of the plain, and assuming the appearance of a small lake, covered with trunks of trees and wood of various kinds. The pass of Barakatlar (Blessings), so passable on the previous evening, was rendered totally impracticable. It is evidently from these rapid and very sudden risings that this river obtained the name of Lycus, from its resemblance to a wolf rushing upon the fold.

We started near midday during a momentary cessation of rain, but were soon turned out of our path by the swollen river, and obliged to ascend the hill. After an hour's journey through a picturesque country we arrived at a point where the Lycus was crossed by a bridge, and made a sudden bend from the N.E., receiving a considerable tributary from the S. The two rivers met below cliffs of trap and sandstone.

We soon arrived at the foot of hills consisting of trap and trap-conglomerate supporting coloured limestone, which a rivulet flowing from above had covered with a deep coating of travertino. After continuing our ascent 20 minutes we came to a village named Yáilar, "summer-quarters," from whence we had a fine view of the Lycus flowing at first through a rocky country; and then through a fertile valley, from E. and W., and backed by the limestone hills of Ovah Tâghí (plain mount), partly wooded and partly white rocky cliffs. To the S. the country consisted of alternate valleys and rounded hills, on one of which a spot was pointed out said to contain an old iron-mine. On this hill the barometer indicated an elevation of 840 ft. We continued along its crest for a short time, skirted round a hill, and came down upon the Lycus, on the banks of which we found a village of four houses, one of which was empty, and in it we found a refuge from the rain that poured down all night.

The country we had hitherto been travelling through consisted of more or less round and irregularly formed and scattered hills. It was almost impossible to reduce them to any system of arrangement: sometimes hard limestone or sandstone gave birth to cliffs, more or less picturesque, from their wooded knolls or steep bare acclivities; at other times, rounded summits commanded on all sides valleys containing villages and cultivated lands, or deep ravines with streams rolling swiftly below. The hills were sometimes, but very rarely, conical, and the serrated outline of the Kará Tâgh generally backed the view: its summits were sharp and sometimes pointed, numerous and narrow, following one another in quick succession, nearly of the same height, and everywhere covered with dark forests of pine.

At this season of the year a large portion of the arable land is occupied by crops of flax which, now young and verdant, are allowed to be all winter protected by the snow. Maize and millet were yet in great part in the fields, cut, but not carried home. The garden-crops consisted of gourds and cabbages.

*Oct. 10.*—Our road to-day lay up the valley of the Lycus, which we first crossed upon a wooden bridge, above which are the remains of an older construction built of stone, and a little beyond it the river receives a tributary from the S.W., considerable when compared with the Lycus itself.

The path we followed was carried along the acclivities of wooded hills, of limestone, cretaceous marls, and sandstone, with trap-rocks and occasional dykes of basalt crossing from S.E. to N.W. The road wound round the acclivities and base of these hills from E. to N.E. At a distance of about 5 miles up the valley the Lycus receives another tributary, equal to almost half the body of its waters, from the S.E. Above the point of junction one of the *Ḳarâ Tágh* mountains rises like an isolated peak to a height of 900 ft. above the river. Six miles beyond this a river is met with flowing from the N., with a bridge and small *khán*, and receiving another tributary from the E.

Our ascent of the *Ḳarâ Tágh* began at this point, and lasted nearly an hour, when we attained its summit, near the village of *Ḳarâ-bínár\** (Black Source.) The barometer indicated an elevation of 1500 feet, and the mountains around did not rise much more than 500 feet above this point. The view now spread out before us carried the eye down the *Ḳarâ Dereh* (Black Valley), over a hilly country to the basis of the *Filiyás* and *Bártán* rivers; and was bounded to the N.E. and E. by the lofty and bold rocky summits of the *Ḳayá Dibbah* (N. 55 E.), and the more tame and wooded outline of the *I'ch-íl-ler Tághí*. Ruins of a castle (?) are met with in the mountains to the N.

We descended the valley of *Ḳarâ Dereh*, and turned to the southward to *Básh Burgház*, a small village at the foot of Mount *Ipsil*,† a spur of the *Ḳarâ Tágh*, where we were to obtain a change of horses.

*Oct. 11.*—Although it had rained all the previous evening, we were enabled in the morning to obtain some lunar distances and altitudes of the sun before we started. Our road lay along the valley of the *Ḳarâ Dereh*, the waters of which flow eastward; the *Ḳarâ Tágh* forming the culminating ridge between the basin of the Lycus and that of the *Billæus*. Before mid-day we left the rivulet, at an assemblage of uninhabited buildings called *Beg*

\* Pronounced *Bunár*; originally, no doubt, *Bínár*, and by the eastern Turks *Buñár*—*n* in the French, *n* in *en, mon, &c.*—F. S.

† *Ipsilítágh*, from the Greek *Hypsile*?—F. S.

júm'ah-sí\* (Bey's Friday market), and used as a market-place on Friday, the Mohammedan sabbath, for the two kádílik's or districts of Básh Burgház and Pershembah.† Hence we ascended N.E. to the chief place of the latter district, a rather showy place at a distance from its whitewashed mosque and large aghá's house, but scarcely containing 30 dwelling-houses. A meridian altitude of the sun gave the latitude of this place  $41^{\circ} 19' N.$  Bar. 28.980 inch., att. ther.  $62^{\circ}$  Fahr. The country consisted of sandstone and limestone alternating in thin beds, and was covered with underwood, chiefly deciduous oaks and juniper. 5 miles beyond it we descended into a deep valley, with a rivulet flowing S., called Tursehgí Dereh-si. Our ascent was up an acclivity, amid trap-rocks and limestone; we then passed through a wood, and near two or three villages, when we came to the open valley of 'Abd-allah Páshá Dereh-si, so called from a mosque bearing the same name, placed in an insulated position on the S. side of the valley, at its termination above the Filiyás. This valley receives all the waters of Kará Dereh, and the Pershembah district, to pour them into the Filiyás, which is here a fine river, divided into five different streams separated by islands of pebbles, occasionally covered with plane, sycamore, tamarisk, and oleander, but sometimes stony and naked; the occasional floods of this river, to judge from its bed, upwards of a  $\frac{1}{4}$  of a mile in width, must be very great, but it is soon confined in one channel; and at Tium, where it empties itself into the sea, though deep, is only about 100 yards wide.

The beautiful valley of the Billæus was crowded with villages, and the views on every side varied and extensive. The river is seen flowing N.N.E., in nearly a straight line, apparently from the very foot of the dark and frowning Yáilá Tágh. To the E. is a hilly country, either cultivated or covered with wood, and interspersed with villages belonging to a second Pershembah district, where the plague had been raging but a short time before our arrival, while our road lay down the river N. 30 E. to Chárshembah,‡ the chief place of another Kádílik or jurisdiction, where we slept and changed horses.

Our attention was now directed towards the ancient sites on the banks of the Billæus, and every inquiry was made regarding the existence of ruins, &c.

Ptolemy has placed a city called Claudiopoliis, and also Bithynium, on the river Elatas, which has been by some supposed to be either the river of Elæum or the Lycus, but Rennell and

\* Beg júm'ah-si bázárf.—F. S.

† For Penj-shenbeh, *i. e.* Thursday, put for Penj-shenbeh bázárf, Thursday's market.—F. S.

‡ Chár for Chéhárshenbeh, Wednesday, *i. e.* Wednesday's market, an elliptical expression.—F. S.

D'Anville both agree in supposing this city to have stood on the Billæus, and Elæus or Elatas is substituted for it. From the exploration now made of the Lycus, which we had followed up to its source, we were convinced of the non-existence of any site of importance upon that river. We had crossed the Elæus (?) at 'Alâbli, and heard of no ruins up that river; and we now approached the Billæus at some distance from its embouchure, and to which point we directed our researches, having heard of no remains higher up the river.

There remained for us, besides Bithynium of Ptolemy and Strabo, Mantinium, and Tium or Tios, in the country of the Caucones, who succeeded the Mariandyni, occupying both shores of the lower course of the Billæus river. Of Tium Rennell says it is now represented by Filiyâs, which is also the corrupt modern name of the Billæus, "but we hear of no remains of Tium."

Oct. 12.—After taking morning sights for me, we started, passing over a plain covered with sycamore and tamarisk, the river being enclosed between low ranges of wooded hills of limestone and marl, with every here and there a village peeping from among the trees. Hemp is much cultivated on the islands of the river, and on its banks. At a distance of about  $3\frac{1}{2}$  miles we forded a large rivulet, 7 yards wide by  $\frac{1}{2}$  a yard deep, called Dagermánós Dereh-şî,\* with some small villages and one large one, Chamánlí Kõi, of about 40 houses, on the hill-side. A little beyond this, at a point where the river, after making a long bend, approaches the hills on its left bank, is a small village called Châi Kõi, built in part upon a mound of ruins, where there are several large hewn stones, which make it not unlikely that this was the site of a guard-house or small military station. Beyond this, at Aḡ-bunâr, we obtained a meridian altitude of the sun, which gave our latitude  $41^{\circ} 29' N$ .

At Gölmeḡchî-ler (Pottersville), a village of 30 houses, on a low hill, by the river-side, and about  $2\frac{1}{2}$  miles beyond Aḡ-bunâr (the white spring), we found many fragments of large hewn stones and marble columns, with distinct remains of an ancient causeway.

A short distance beyond this a mass of basaltic rocks, having a tendency to the prismatic structure, advances to the border of the river on the left, narrowing its bed considerably, and forming a kind of defile. Here are the remains of an old gateway, and a little beyond them a mound of ruins, overgrown with underwood, which may have belonged to a guard-house.

Beyond this was a noble plane-tree which measured 8 yards

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\* Degirmân Dereh-şî, Mill-valley?—F.S.

round its trunk, at a height of 12 yards from the ground; but still more remarkable for its fine and symmetrical form than for its dimensions. Its branches spread nearly equal in all directions, as it towered to a height of upwards of 60 feet.

The river, winding round about 2 miles to the N.E., turns suddenly to the W. before reaching the sea, and sweeps round the foot of a hill, which bears a considerable structure of various ages, and which announces itself as the castle of Tium.

There were several vessels of small burthen in the river, and a modern village designated as Saferjî O'ghlá. Crossing over the hill, we passed by an ancient gateway and entered upon the picturesque ruins of Tium, beyond which, after passing a fine village, Beglarun Kõi, we came to a second, Hisár-Anlú, the village attached to the castle, the residence of an 'Ayyán, who found us a home for the night.

*Oct. 13.*—We walked the previous evening to the site of Tium, by an ancient causeway, hedged in on both sides by bays, probably sprung from olden roots, as the road from Antioch to Daphne is in part similarly ornamented; yet such plantations are rare among the Mohammedans. Passing over the walls, we found pillars and fragments of ruins rising here and there, but everything was covered with a dense and almost impenetrable shrubbery. The evening was occupied in measuring and sketching a beautiful ivy and shrub-clad ruin, that appeared to have been a church or a basilica. The next day we began our labours at a less picturesque edifice, probably a guard-house, with two stone platforms, descending into the town; beyond, and nearer to the centre, were a few arches belonging to an aqueduct; from this point we visited a mound where were some curious ruins, and numerous sarcophagi, the lids of which were of large dimensions, and cut in solid stone, but the coffins were made merely of fragments of pink slaty limestone.

The next object of interest was a small but very perfect amphitheatre, now buried amid trees and shrubbery; and from this we went to the castle, which we found to be the most altered and rebuilt, and consequently the least interesting of all the ruins. We met with no inscriptions, but transmit the details of our researches, which are only of a general nature.

About midday we were ferried over the Filiyás, the day being very warm, therm. in shade 72°, and the temperature of the water only 50°. Our road at first lay along a level plain of alluvium, formed by the river; and we were once turned back by some deep marshes, beyond which we entered a thick forest, and began to ascend along acclivities composed of trap-rocks and limestones. We were now in the district of Kól Bazár, but there were few villages; and in the evening, after travelling

about  $10\frac{1}{2}$  miles, we arrived at K̄sil Elmah, the residence of the 'Ayyán, in a pretty valley which extended northwards about 3 miles to the sea-shore. The 'Ayyán was captain of a merchant-vessel trading between Bártán and Constantinople, and being an intelligent man, I have ventured to insert on the map the details which he gave to us of the coast-line from Cape Bábá eastward to Amá-şerah.

*Oct. 14.*—We could not stop the Sunday in the crowded residence of the 'Ayyán, so continued our journey, which was a short one, over the same kind of country, low, hilly, and wooded, but with a few more villages, for about 9 miles, when we came to the crest of some chalk-hills, from which a picturesque view was obtained of the river and modern town of Bártán, like most Oriental cities, looking best at a distance.

In the calcareous limestones of these hills we found remains of marine algæ, but no shells. An abundant spring which issued from the same formations indicated a temperature of  $57^{\circ}$ , the air in the shade being  $79^{\circ}$ . We had still a marshy plain, impassable on foot, to ride over before we got into the town, where we were lodged in the Khán.

*Oct. 15.*—Bártán, a town little visited by Europeans, is situated in lat.  $41^{\circ} 36'$ \* as determined by a mer. alt. of the sun. It is built at the junction of two rivers, the Kójahnás, from a village of the same name, and near which it is said to have its sources, and the O'rdeirí, which flows from the foot of the Durnah Yáilási, in the district of Za'farán Bolí. When the two rivers unite they are called the Şú Chátí. The Kójahnás Armak flows through a deep bed in alluvial soil, being liable to an occasional rise of from 8 to 10 feet. Its depth at the present moment averaged from 6 to 8 feet; its width was 28 yards, and its rate  $2\frac{1}{2}$  miles an hour. The O'rdeirí exceeds the Kójahnás in width, being about 30 yards across, but is neither so deep nor so rapid. There is one stone bridge over the Kójahnás, and a wooden one replaces another that existed formerly on the same river at the N.W. end of the town. The communication over the O'rdeirí is kept up by means of a ferry, but there are also remains of a stone bridge. There were numerous vessels building at Bártán, some of which were of upwards of 100 tons burthen, but the port is 2 miles below the town, which is 4 miles from the sea by the river, and 3 by land.

The town of Bártán has 650 houses, out of which there are eight houses of Christians, who have no church. The Mohammedans have five mosques. The houses, on account of the marshy character of the surrounding country, are all built of two stories, the

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\* Gaultier says,  $41^{\circ} 33' 52''$  N.,  $33^{\circ} 14' 8''$  E. of Greenwich.



upper one of which is alone inhabited. For the same reasons, the town is carefully paved with large limestone slabs, better so than any Turkish town we had yet seen; and some of us were doubtful if the pavement did not belong to a period anterior to the Mohammedans, but remains of antiquity are too scarce at Bártán to certify as to its being an ancient site.

The town is built upon two low hills of cretaceous limestone dipping S.E. at an angle of  $20^{\circ}$ . The houses also extend into the valley between these hills, which rise S.E. and N.W. of each other, and stretch to the banks of the Kójhánás on the one side, and to those of the Ordeiri on the other, rising up the hillside to the N. or beyond the latter river. Strabo says the Parthenius rises in Paphlagonia, and derives its name from the cheerful meadows through which it flows. The Parthenius is generally considered the same as the Bártán river.

Oct. 16.—Leaving our baggage at Bártán, we hired horses to take us to Amáseráh (4 hours) and back again the same day. We crossed the Ordeiri, and soon afterwards turned up a narrow valley with a small tributary to the former, designated as the *Kará Chái*, or black river. The valley soon narrowed, and was nearly blocked up by sandstone cliffs, which often presented a rude outline with fantastic forms, and in one place a rocking stone is curiously perched upon a pinnacle of the same rock. We now commenced the ascent of wooded hills, the road a bad one, and continued along these till we came within view of the sea, when we turned to the E., by a steep descent, with steps hewn out of the solid rock. It would have required little, in a country where so little public spirit in the way of internal improvement exists as in Asiatic Turkey, to have determined that this road had been executed by another nation of workmen, but it was not long before we came to a small niche in the rock, destined to hold apparently a figure, and beyond was a tablet containing an inscription in Latin, of which we could only make out a few words, as *PROTAGE NORENTI CLAUDI GERMANICI \* \* \**. A little beyond this is a tablet basement, supporting an arched frame-work, with the upright figure of a Roman in his toga, much mutilated and the head broken off, but the attitude is graceful and the detail good. Close by was a column and pedestal cut in solid rock, and supporting a colossal eagle, of which the head had also been struck off. There were also two tablets, of which the inscriptions were quite illegible. The column was 12 feet high, the statue of natural size. The base of the frame was 7 feet wide, the height 12. The base of the column was 3 feet wide, the height 12 feet, and the eagle was 4 feet 6 inches in height.

Further on, on the road side, was a semi-circular arch, formed of one ring of solid masonry, 14 feet wide by 7 high, and running

back 15 feet ;  $\frac{1}{2}$  a mile farther, upon an elevated site, probably visible at sea, were the remains of an oblong monument, apparently a mausoleum, near which was the lid of a large sarcophagus.

The road now led circuitously down a steep hill towards Amáserah, which, like most modern Turkish towns that occupy ancient sites, is picturesquely situated. The town, which consists of 145 houses, and has a population of about 800 persons, is built upon a rocky peninsula that has two necks, the first formed by a minor and greater bay of the sea ; the second by a small inlet, over which a narrow causeway led to what was formerly the castellated or military portion of the town. Rude and nearly perpendicular rocks form the cape called Diwán Búrní, which rises above the little bay to the S.W., and the whole of which was formerly built in with large stone blocks, like a well-kept harbour. The bay to the E. is wide and capacious, and beyond the town there is a rocky mass, forming (apparently always) an untenanted island ; and to the E. a lesser rock is connected with the mainland by a wall in a ruinous and dilapidated condition. The whole of that part of the ancient and modern town which occupies the peninsula was surrounded by a wall defended by towers, which appear to have been renewed at various times, but to have received their chief regeneration from the Genoese, whose Christian escutcheons are over every gateway, and whose ornamental taste in architecture has here and there interwoven Gothic tracery and Byzantine wreaths amid the solid blocks of Roman perpetuity ; and even eagles, sculptured on white marble, are seen prostrate at the angles or corners of walls which they once adorned. The town overlooks the sea to the N., but its greatest extent fronts the interior or the S. ; and there extends before it and in the same direction a well-wooded and picturesque valley, which is replete with ruins of various character. One of the most extensive of these is a large building of red tiles, supporting in an unscientific manner huge blocks of stone, and cut up by numerous irregularly-disposed and irregularly-formed arches. This place is called Badistán by the natives : it was approached by a handsome gateway with a semi-circular arch, and appears to have been a monastery. At the foot of the mountains to the W. is a fragment of wall with two tiers of arches, which perhaps belonged to an aqueduct. On the hill-side are other ruins, overgrown with shrubbery, amid which they were just discernible, while a more distinct arch stood prominent, high up on the hill-side, and assisted in filling up a picture such as lesser Asia is almost unrivalled in producing, and in which monuments of by-gone times, belonging to such varied epochs and people, are gathered together in the same little centre of unchanging natural beauty.

We are now about to quit Bithynia, and, crossing the Parthenius, to enter upon the no less interesting districts of Paphlagonia, but before doing so we may be allowed one or two general remarks.

First, it is worthy of notice that, in all the contacts that were observed between the cretaceous or supracretaceous limestones and the igneous rocks in Bithynia, only two orders of modifications induced upon the original aspect of the rock were common,—the one into a compact limestone that was not granular, and the other, and by far the most common, was into a slaty pink-coloured rock, indicating a large evolution of gaseous matters at the period of the effusion of the igneous rocks, without any very considerable heat. This peculiar red colouration of portions or zones of stratified rocks has already been attributed by some geologists to an impregnation derived from igneous sources, as in the case of the red schists of some of the Swiss cantons, which have appeared to be derived from the prolongation of a metallic or plutonic vein (Boué, vol. i. p. 484). And the origin of the same bands of red limestone in the Alps has been placed in the same category by Studeo. In the Bithynian chalk and supracretaceous limestones it is only where that formation is in contact with or in proximity to igneous action (which is always made sufficiently evident by the flexuous and contorted or variously dipping strata) that the same phenomena are observed.

Secondly, an instructive comparison may be made between the sedimentary formations of Bithynia and those of Paphlagonia. It would appear that the limestones of the first country, from their uniform mineralogical characters when unaltered by contact with volcanic rocks, and the continued absence of organic remains, excepting a few marine algæ, had been originally formed in the deep sea; while the ostracite sandstones and highly fossiliferous limestones of Paphlagonia have evidently had a littoral origin.

This view of the subject would put the Nicomedian peninsula and a large portion of Bithynia at one period in submarine depths, which were limited to the S. by the Olympus, which at the same time bounded to the N. the central lacustrine deposit of Asia Minor described by Mr. W. I. Hamilton as bounded to the S. by the western prolongation of Taurus, and upon the south-eastern acclivities of which we have traced the same littoral formations of the supracretaceous epochs, succeeded in Northern Syria by deep sea and non-fossiliferous rocks, apparently of the same epoch as the Bithynian deposits.

Lastly, although the country we had traversed from Aḳchah Shehr to the Parthenius was everywhere hilly, and sometimes mountainous, still the country of littoral mountains could always be distinguished from the more southerly and lofty chain of

Olympus, which, although broken into different parts, and known by various names, is still always distinguishable from the lateral parallel and transverse chains which give origin to the numerous small streams that flow into the sea, or form tributaries to the greater rivers, as the Sangarius, the Lycus, the Billæus, and the Parthenius.

From this great E. and W. chain, others apparently start at nearly right angles, and approach the shore from S. to N., but this would be an incorrect way of expressing the fact, for these are distinct systems of mountains, having a different origin and structure, generally plutonic, and bearing up on their flanks the broken and tilted-up fragments of those sedimentary deposits which enter into the composition of the round and irregular hilly districts of Bithynia. Such, more particularly, is the case on the hilly chains of Kójamán and of Kará Tágħ and Ipsil, with their trachytic cones and outlying basaltic dykes; and of similar nature are three distinct ranges of hills, which advance in as many different promontories into the sea, between the embouchure of the Filiyás and that of the Bártán river, formed of a nucleus of rocks of the felspatho-pyroxenic series, succeeded by trachytes near Amáserah, and having between them an irregular forest-clad and hilly country composed of rude sandstones, altered limestones, and limestone shales, the valleys of which, when filled with detritus or alluvium, are almost alone subject to cultivation.

*Oct. 18.*—We left Bártán and pursued our journey up the course of the O'rdeirí in a south-easterly direction. A rugged and mountainous district, that of the Kayá Dibbah (hollow rock), lay to our left, as it had to our right in going to Amáserah. In this little alpine and picturesque district a total difference is observed from the generally tame outline of the Olympus, and of the transverse chains of Bithynia. The same craggy steeps extend by the Kará Kayá, or black rock, another lofty limestone precipice, as far as to the sources of the O'rdeirí, in a south-easterly direction; but more to the S. they are united to the Paphlagonian Olympus by mountains which are less lofty, with a rounded outline and wooded acclivities, named the I'ch-il-ler Tágħí, and which attain by trigonometrical measurement an elevation of 1966 feet above the lower plain of the O'rdeirí.

The O'rdeirí forces its way through a pass in the I'ch-il-ler Tágħí, which we reached in 4½ hours by a winding route, after fording the river three times.

At the entrance of the pass two lofty mountains rose to the right and left, clad to the very summit with forest-trees of varied and beautiful verdure, while the river, now a mountain-torrent, rolled over a stony bed below. This pass opened into a pretty but uninhabited plain, and then again narrowed, the road being

carried amid huge masses of sandstone and conglomerate, over-shadowed by laurel, ivy, box, myrtle, oleander, and other ever-green and deciduous shrubs. After passing beyond this, through a forest of birch, we forded the river, and came amid plane and some pine, the seeds of which had been brought down by the torrents, to where the O'rdeirí received a tributary from a portion of the Kayá Dibbah, to the N., while we followed the south-easterly branch, and at a short distance reached a poor hamlet called Şarnış, in the 'Ayyánlık of Oluz.

*Oct. 19.*—There was no possibility of getting the requisite number of horses at Şarnış, so we mounted the few wretched animals that could be obtained, and put the luggage into waggons drawn by buffaloes. At about an hour's travel we came to a mosque in the forest where the neighbouring villagers had collected for prayer, and were at the same time roasting two whole sheep, to feast upon after service. Crossing the river at this point, we commenced a long ascent through a forest on the hill-side, the road being made of logs of wood laid transversely. The lofty precipice of limestone called the Black Rock opened upon us to the N.E., and a tributary of the O'rdeirí came through a rocky pass near its base. The barometer indicated for the height of the crest we were passing over about 900 feet.

Descending again into the well-wooded valley of the head-waters of the Ordeirí, we passed several good saw-mills, more especially on approaching Dúrsán-lí, a village in a valley to the S., and the residence of the 'Ayyán of Ováh or Ováh Kaza sí. Dúrsán-lí is corrupted from Dórt Hasanlı—the four of Hasan.

*Oct. 20.*—Our road still lay towards the sources of the O'rdeirí, and after a short journey through woods of plane and cork, with underwood and coarse grasses, we passed the mosque and villages of Bágh Jeviz,\* which extends far up a valley to the N.; while our route lay along a more expansive and wooded vale to the S.E. Everything was upon a large scale, and truly alpine: at the head of this valley was the mountain of Durnah Yáílá-sí, with a forest of pine fringing its rude acclivities, but with a bald summit above all: to the S., wild crags and precipices, the home of the mountain antelope and the ibex, alternated with dark woody recesses, that appeared almost unattainable. There was here and there a village in the bottom of the valley, and a few houses (more indeed than might have been expected in so secluded a spot) were scattered upon the summit and acclivities of the hills to the N. These hamlets were tenanted by a race of a very dark and swarthy hue, with uncombed hair and a neglected appearance. The rocks in the neighbourhood consisted of sandstone and sandstone

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\* Walnut-Garden.

conglomerates, passing into millstone grit, and associated with limestones, limestone conglomerate, and limestone shales. It took us exactly 4 hours and 40 minutes from the time we left Dúr Sanlí to gain the crest of the watershed of the O'rdeirí. The two barometers indicated for this point an elevation of 3200 feet; but, although we had been always ascending since we left Bártán, it was very different with the country now before us, which, forming the two Iflánis, and named by Rennell, after an Oriental authority, "the stony Ifláni," extended to the E. in an elevated and continuous moorland.

The great features of the new country we had now entered upon consisted, first, in the high range of mountains which began at the Durnah Yáilá-sí, and extended to the S. as far as the culminating point of the Şarkhún Yáilá-sí, now covered with snow. This range is identical with the Mons Orminius of the ancients.

N.E. of this was the great upland of Ifláni, or central Paphlagonia, which is formed of supracretaceous rocks. In advancing towards the S. this upland and the stratified rocks of which it is composed begin to be broken up by water-courses and ravines. When once the upper crust is broken, a softer and more friable material beneath is carried away with rapidity till it meets with another hard bed: at the head of the lateral valleys there is thus only one rock-terrace above the rivulet-beds; but, in descending (as is generally the case), the number of these rock-terraces increases, while, at the same time, the valleys widen, till, pretty nearly at the same point, namely, on arriving at the valley of the Sógánlí Sú, the table-land, which has gradually diminished in elevation, terminates in rounded headlands between different rivulets. Beyond the same river, a vast pile of horizontally-stratified deposits, named Kází Yáchí (Goose's neck), towers above the river to a height of at least 1000 feet. This is no mountain mass, but a portion of the same upland, denuded by various causes, more particularly the action of torrents, and is found to be upon the same level as the plain of Ifláni, although to a spectator in the valley of the Sógánlí Sú it appears as a distinct mountain height.

It was here, and at an elevation of upwards of 3000 feet above the sea, that we first met with almost continuous beds of large oysters, and in the limestones below cones and spiral univalves, generally of a gigantic size. The whole of the rocks around Za'farán Bóli are redolent with fossil remains, and some beds are composed entirely of nummulites.

The same evening we arrived at Za'farán Bóli, and were glad to enjoy the repose which the sabbath offered to us in the quarter of the Greek Christians, which is called Kurán Kói.

Za'farán Bóli, a town almost unknown to Europeans, is built at

the junction of two small streams. The one comes from the N., the other from the N.E., and the united waters flow under the lofty arch of a cliff-overhanging bridge, and down deep rocky dells, to the Soghánlí Sû. To the S.E., the upland, terminating in abrupt but low cliffs over the town, is occupied by a new barrack and its attached mosque. In the valley between this and the central upland is part of the town and the Khán, while  $\frac{1}{2}$  a mile beyond is the large suburb called Kır Kullah; and at the entrance of the same valley, called Kayá O'ghlí, a detached mass of rock bears upon its summit the ruinous wall of a fort of no great antiquity.

The central upland terminates in a circular disposition of its low rocky cliffs, and is again continued in the centre of the town by a detached rocky terrace, which is also surrounded by ruinous fortifications, and is the present residence of the governor, and the prison of the place.

The next valley is divided into two minor ones, one of which is ornamented at a short distance by the suburb of Tókátlí, containing about 150 houses, embosomed in gardens, while at the top of a rock-terrace, and approached by a steep ascent, is the suburb called Kurán Kõí, the residence of the Greeks. Beyond this again are two other large villages, Bâghlah and Búlák, each containing from 150 to 200 houses.

The town itself is situated in the mouths of the different ravines, and contains about 3000 houses of Mohammedans, while the Christians have 250 houses and one church, that of St. Stephen. Thus, without the suburbs, Za'farán Bólí may be considered to possess a population of 15,000 persons. It contains a tolerable charshí or market, four handsome mosques, besides several smaller ones, two large kháns, and four public baths. Its chief trade is in saffron, which is largely cultivated in the neighbourhood, and has rendered this place one of the most flourishing and populous towns of Anatolia.

The terminal name of this city indicates a Greek origin, whether Hellenic or Byzantine. The first is a later interpolation of the staple commodity of the place. The tradition preserved by the Greek residents is that of a church founded here by Theodora, the wife of Justinian, and consecrated by the gift of a limb of St. Stephen, from relics brought from Palestine. It is probable that this empress, the frail object of Gibbon's just but unsparing sarcasm, met with kindness, or dreamt her first visions of future greatness, in Paphlagonia, which it is recorded she last left with the pleasing assurance that she was destined to become the wife of a potent monarch. The memory of such an event may have led in after-periods of devotion to the foundation of a church at a spot for which the name of Theodoropolis is still claimed.

It is recorded by Gibbon, on the authority of John Malela, Theophanes, and the historian of Justinian's building exploits,—Procopius,—that in the journey to the Pythian baths, through Bithynia, she distributed liberal alms to the churches, the monasteries, and the hospitals.

In that part of the Peutingerian tables which contains a cross road by Otesa ('Osmánjık) to Amasia, there is a back road which Rennell has supposed to be the same as the coast-line from Tium to Sinope, but which contains two names on the road from Amasia to Sinope, viz., Stephane and Thomia. The first name might have belonged to that community where the gem-covered member of the martyr is still most reverentially preserved—the second to Kastamúni.

*Oct. 22.*—We made an excursion to Kará Bîñár (black spring), a spot on the stony upland, 7 miles N.E. by E. from Za'farán Bólí, where, in a small isolated grove of dark pines, and amid numerous Mohammedan tombs, were fragments and capitals of columns of a plain Byzantine order, while in their neighbourhood a slab of rude limestone bears a still more rude effigy of a female figure, of less than natural size, the breasts bare, the face mutilated by time, and the shoulders ornamented with what were probably a pair of wings. Tradition has preserved no memory of this spot, at once claimed by the Mohammedans and the Christians as belonging to their progenitors, but whether a temple, a monastery, or a mausoleum, might be a matter of discussion.

We started by the village of Tókátlí, and, leaving Kır Kullah on our left, crossed the easterly ravine of Za'farán Bólí, called Kaya O'ghlí, and a limestone plain having two farms upon its almost naked surface; beyond this, and 6 miles from Za'farán Bólí, we crossed the deep and rocky dell called Şerb Dereh (rough valley), which we had also traversed at a point higher up, on coming from Dúr Sanlí. This deep ravine completely cuts Za'farán Bólí from the upland, and would form a strong natural line of defence.

We returned by another line, following the Şerb Dereh, and keeping the rivulet on our left-hand side, as far as to the valley of the Şóghánlí Şú, which we found full of villages. We passed through one large one, Yasí Kóí, containing 300 houses of Mohammedans, and seventy-five houses of Greek Christians. It has three minarets, and the population is engaged in the cultivation of saffron, besides which the Christians manufacture wine and opium in small quantities.

*Oct. 23.*—Started early in the morning upon an excursion to see the junction of the Şóghánlí Şú with the river of Hamámлі. Our road lay across the Búlák Dereh, a ravine picturesque as the



others, and then along the banks of the Şóghánlí Sú, till about 7 miles from the town we arrived at the junction of the two rivers, and at which point a bridge was carried over them. The united stream was 42 yards wide, 2 feet in depth, and flowing at a rate of about 3 miles an hour.

We returned from the place, over well-cultivated fields, now in part clothed with flowering plantations of *colchicum autumnale*, to the village of Búlák, from whence, passing over a rocky ridge, we entered upon a beautiful mountain-enclosed vale, at the foot of Orminius, covered with vineyards, and diversified by small country-houses. We journeyed up this valley about a mile to where it turns N., and at the head of this, passing over igneous rocks which have disrupted and borne up vast cliffs of limestone, we found a fine stream of water flowing from beneath the limestone rocks. We passed over the rocky beds, through which the waters had forced themselves a passage, and found an old channel blocked up by huge masses, which had fallen down from above, and probably diverted the stream from its original course. The good people of Za'farán Bólí make picnic parties to this picturesque spot, which is also famous among the Christians as the site of two monasteries—one devoted to Theodorus or Theodora, the other to St. John. The temperature of the water was 45°; the air 50°. We returned by the suburb of Bághlar or Bógházlú, so that we had now encompassed the town on all sides.

But the important point determined by this day's excursion related to the distribution of the rivers of Paphlagonia, concerning which more errors have crept into the maps than even in the upper course of the Halys.

All the maps indeed agree in making the river of Bólí flow into that of Filiyás, but all of them equally agree in making the rivers of Cherkesh and of Bayándır tributaries to the river of Bártán. But while Kinneir, Leake, and Lapie make the river of Za'farán Bólí (Şóghánlí Sú) and that of Aráj flow into the Halys by Kastamúni and Tášh Köpri, Rennell has made the Aráj, flowing from Kastamúni, join with the Hamámlı or Bayándır river, and flow into the Bártán.

All these various and conflicting views, each incorrect in some one particular, are simplified by the knowledge that the great basin of the Filiyás or Billæus river receives the waters of the rivers of Bólí, of Bayándır, of Cherkesh, and of Aráj, which flows from the western side of the Kastamúni hills, and joins the Bayándır river 2 hours above the junction of the Şóghánlí Sú with the same river. The Cherkesh or Bayándır river, which we had seen in 1837 at both those places, is said to flow onwards, and 8 hours from Hamámlı to receive the waters of the Milán, coming from a mountainous country, including the governments of

Sháh-butún and O'lák; the chief places of which are Ak Básh, 4 hours from Milán, and Pahlaván, 11 hours from the same place. Near Milán are said to be some thermal springs, and opposite to the junction the village of Akchah Hisár.

The united rivers of Bayandír, Aráj, and Šóghánlí Šú flow through a pass in the Orminius at the foot of the Šarkhún Yáílá-sí, and are said to receive the waters of the Bóli river 20 hours from this point, which must be very wide of the truth.

The basin of the Bártán river, or Parthenius, we have seen consists of two comparatively small streams, the Kójhánás and O'rdeiri, both of which flow from the northern and western slopes of the Orminius and the Paphlagonian Olympus, and united are less in magnitude than the Filyás before it enters the Orminius.

The latitude of Za'farán Bóli, by the mean of two mer. alts. of the sun, is  $41^{\circ} 13' N.$ ; its longitude, by chronometers,  $32^{\circ} 53'$ . We had much bad weather and snow while here. The mean height of the barometer was 28.450, indicating an elevation of about 1200 feet.

The rock formations in the Orminius consist of trap-rocks and trap-conglomerates, with limestones and sandstones which were non-fossiliferous; and of sandstones and superincumbent limestones in the plains, which abound in organic remains.

Retracing our steps to our former barometric station [3200 ft.] at Šabán Chiláh, we found ourselves in the midst of snow and ice, and our road lay through forests, where the snow tumbled upon us from overlaiden branches of fir. At the village of 'Osmán-zikí our attention was attracted by a dyke of compact quartz rock, rising like a wall 20 feet above the soil. The road was in other respects very uninteresting. The moorland being little diversified, when cultivated, there were a few villages,—when not, it was a continuous waste or forest-land. It was late in the evening before we arrived at an isolated house, where the 'Ayyán of that portion of Ifláni which is under the jurisdiction of Za'farán Bóli resides. There were several robbers, in chains, walking about the house. In the valley of the 'Ayyánlik we counted fifteen small villages.

Oct. 26.—Crossing over some low sandstone hills, we came to a first valley of Bedil, with five villages, and then another, which expanded into a plain, cultivated in almost every part, and studded with villages, in the midst of which was the Bázár, or market-village, called Istánból Bázár. At Constantinople the term for the first day in the Mohammedan week is Bázár,\* and for the second, Bázár Erteh-sí. In Anatolia the second day in the week is called Devrek, but, when applied to a market, they say Istánból Bázár, or Constantinople market (day).

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\* Market (day), gúní being understood. Bázár-erteh-sí, market's morrow, *i. e.*, day after market-day.—F. S.

At Chelebí Kõi, N. 5 E. of the Bázár, an alt. of the sun gave the latitude of the place  $41^{\circ} 24' N.$ , bar. 27.00 inches. After a short journey of 4 hours, we came to a stony district, at the foot of which was the residence of the 'Ayyán of Ifláni, under the jurisdiction of Kastamúni: hence the two Iflánis are always distinguished as Ifláni of Za'farán Bóli, and Ifláni of Kastamúni.

Iflání of Kastamúni is stated to have twenty villages under its jurisdiction; but the difficulty of obtaining information upon this subject may be judged of by the fact that the 'Ayyán of Ifláni of Za'farán Bóli asserted that there were only twenty-four villages in his jurisdiction, while the 'Ayyán of Ifláni of Kastamúni asserted that the same government contained nearly eighty villages.

A number of villages often assemble together to hold a court, more particularly in reference to taxation: they call this one Díván, and, when several unite, they are numbered accordingly. This arrangement is frequent in this part of the country; and hence, in the map, four or five villages will sometimes be found marked with the same name.

The mean elevation of the great upland of Paphlagonia may be judged of by the height of these places, situate at a distance from one another, and upon what constituted pretty nearly the average between the level of the valley bottoms and the tops of the undulating territory: such are Ifláni of Za'farán Bóli, 3000 feet, Chelebí Kõi, 2780 feet, and Ifláni of Kastamúni, 2840 feet. The plain containing the Bázár of Ifláni of Za'farán Bóli is about 100 feet below Chelebí Kõi, while the dominating land, as at Sabánchilah (yet not out of the upland), attained an elevation of 3200 feet. The district of Dádáhi may be looked upon almost as a portion of the same upland, only that, at a height of 2400 feet, it is surrounded by mountains, and is separated from Ifláni by the U'zún Búrún chain, the summit level or lowest part of the crest of which has an elevation of about 3600 feet.

To the north the Paphlagonian upland is broken up by abrupt and sharp or rounded mountains, and intersected by deep, narrow valleys; which, with their several rivulets and rivers, soon find their way to the Black Sea, through various windings and picturesque glens and ravines.

On this upland the cultivation consists almost entirely of wheat and barley; indeed it may be considered among the most productive wheat-countries of Anatolia. Besides this they also cultivate a species of *Polygonum* in the fields, and a *Chenopodium* in their gardens, principally to feed fowls, the eggs of which form a large article in their diet; but these seeds are ground also, and used in making bread. The gardens also furnish a little maize in sunny exposures, and plenty of cabbages and pumpkins. The climate and soil are well adapted for potatoes. The appearance

of the fields, with their short stubble, the marshy spots covered with coarse sedges, and the green sward, with its long festucas, is very similar to that of many parts of Ireland. The land is both manured and regularly top-dressed. As a general average, 80 ákahs, or 220 lbs. of wheat, fetch 25 piastres, or 5s.; the same measure of barley, 3s.

*Oct. 27.*—Crossing the limestone rocks of Ifláni, the road opened upon the cultivated valley of Şighir (ox,) beyond which was a small plain, with five villages under one court (Díván), named Tekiyyeh Kóî (convent ville). Beyond this, the character of the country completely changed, from a continuous upland, intersected by nearly circular plains and valleys, with gentle slopes, to more lofty mountains, chiefly with conical, although not actually sharp, summits; rapid, but not abrupt acclivities, and deep and narrow valleys, clothed to the base of their sides with forests of fir; which, on the mountain sides and summits, alternated with equally prolific, but now leafless, woods of birch.

One of these narrow valleys now opened before us, having a little cultivation, and corresponding groups of hamlets like *eyries* on its side, while a black forest spread out below. This district is called the Kará Agháj (black tree). It is in the 'Ayyánliḳ of Chílání, where we arrived after about half an hour's farther ride.

An hour's journey from Chílání brought us to the foot of the U'zún Búrún, and in another hour we reached the summit level or lower part of the crest, for which the barometer indicated an elevation of 3600 feet. This mountain chain extends nearly N.E. and S.W., and is formed of rounded mountains with gentle acclivities, covered with wood from the base to the summit.

The descent was more rapid than the ascent. We passed some fine specimens of pure quartzose rocks; but, unfortunately, night overtook us, and entering upon a plain studded with villages, and belonging to the 'Ayyánliḳ of Dádáhi, after a journey of 4 hours from the crest of the mountains, we arrived at the 'Ayyán's house (first passing the Bázár in the middle of the plain), and where we were, as usual, well received, and treated with a large fire.

The 'Ayyánliḳ of Dádáhi has under its jurisdiction about twenty-four villages: the cultivation is the same at an elevation of 2500 feet as that of the Ifláni district; but maize, tobacco, and French beans are added to their productions: vines do not succeed.

The plain itself is formed by the union of several valleys, but more particularly two large ones, which extend to the S.S.E., and to the S.W. The first, Khónsilar, contains eleven villages, of from seven to twenty cottages; the second, thirteen villages of a large size. The plain is surrounded on all sides by mountains, which are not continuous, but rather in groups. To the east alone are some limestone ridges above the isolated residence of the

'Ayyán; but to the S., the S.W., and the N.W. are groups of rounded schistose hills. The highest of these is called Gölgi Bel, now covered with snow at its summit.

*Oct. 28.*—Started at first in a N.W. and then in a N.E. direction, over the range of hills which bounded the plain of Dádáhi. Our road up the hills lay at first N., a little W., then N., and finally N. a little E. to the crest. The hills were covered with forests of oak and fir.

The descent was to the E. of N., by the village of 'Arabah-chí-lar (Waggoner's-town), consisting of three parts on opposite sides of a narrow and steep valley. From this we turned E., through Gerish (three small villages), then over low, fir-clad schistose hills, down to a brook, where we first met with fine quarries of excellent roofing-slate, a fact that may not be uninteresting to the Turkish government, as the slates now used at Constantinople are brought, at some expense, from Europe, chiefly from England.

This valley soon opened and turned N.  $\frac{1}{2}$  E. to the vale of the Daurikán Irmák. It was most remarkable for its abundance of cranberry-trees, now in full fruit. The trees were small, with a hardy but stunted trunk, somewhat similar to the olive. Jays, blackbirds, and fieldfares were feasting upon the ripe berries.

On entering the valley of the Daurikán Irmák, here about 13 yards wide, by 1 foot in depth, our road turned due E., and, with some deviations, led us to Júrimarán, the residence of a mukhtár, or sub-governor, who was to provide us with horses for our further journey.

*Oct. 29.*—We followed the river's bank about E. by N. 3 miles. It then took a bend, crossing from N.E. from a different country, consisting of chalk cliffs and hills of flinty gravel, from which some neighbouring villages are employed in making gun-flints. Dereh Kõi is a small village, prettily situated in a deep glen surrounded by precipices. To the S.W. is an extensive plain, cultivated and covered with villages, belonging to Kúreh Kazá-sí (Kúreh district). To the N. a hilly district, where is the bázár of Júrimarán, and a conical hill, on which are the vestiges of a castellated building: we obtained bearings of it from the next plain. Our muleteers professed not to know the road or the names of the villages, so we got a boy as a guide from the next we came to.

Continuing over the upland of Salmánlí, the chalk terminated in a long and abrupt precipice, forming a terrace of rock, which rests upon igneous formations, and extended from E. to W., fronting a broad, plain-like valley, which was cultivated, and abounds in villages belonging to the district called O'lunjeh.

Beyond this valley we passed through a pine grove on chalk and sandstone, at the head of which a rivulet flowed from a subter-

ranean passage: beyond this we came upon carbonaceous and other schistose rocks, and among lofty wooded hills. Night again overtook us, and there was no possibility of stopping; for had we done so our muleteers, who had been rebellious all day, would have decamped during the night, and left us without horses, so we made a forced march, ascending for upwards of an hour the mountains of Bakır Kúreh-sí (copper district), and descending into the little mountain-basin, in which the town, attached to the copper-mines, is situated, arrived there at about 9 P.M.

Oct. 30.—The general effect of the town of Bakır Kúreh-sí (copper district) is very good. It is situated in a deep hollow, for which the mean of the barometer gave an elevation of 2800 feet, and is surrounded by mountains, of which the most remarkable is called Bakır Sultán. Its acclivities are covered with the red-looking refuse of former mining operations, and it terminates in a rocky pinnacle which rises 710 feet above the town. On this pinnacle is a tomb and a keeper's house. The view from the summit presented, in every direction, a continuous succession of mountains, rounded out with steep declivities to the E. and W.; broken up into bold, rocky, limestone cliffs to the N., and overtopped by the more distant snowy summits of the Alkás Tághí\*, to the S.E.; while clouds lay over the Black Sea like a white shroud spread at some distance beneath our feet. The effect of these mountains upon the climate may be judged of by the fact that the previous evening we were almost wet through by a drizzling rain, while the sky above was nearly cloudless, and the moon shone bright.

To the S.W. of the town is a conical mountain, named Kızıl Kára Tághí; to the S.E., Kırnák Tághí, which we crossed on our arrival and at our departure; to the N.E., Káz† Yúsof Tághí; and N. by E., the limestone cliff called 'A'r-Sizler Qayá. Such are the names of the principal mountains which are grouped around the copper-mines, comprehended by the Turks under the name of the Bakır Kúreh-sí, *i. e.* copper district.

There is every probability, from the character of the scorïæ, that the veins or beds from which the ore was formerly obtained consisted of compact copper pyrites; but although we descended some distance into a shaft, we were unable to obtain a specimen, nor were any in existence in the town itself. It is now many years since the mines were wrought. In some cases the walls and roof of the galleries fell in; in others they were filled with water, although there still exists some doubt whether the deepest part of the shaft goes below the level of the valley, and if not, the mines might be recovered by carrying horizontal or slightly-inclined galleries directly to where the waters are accumulated: at all events

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\* J. N., p. 648.

† Kázı?—F. S.

a little enterprise might, with the aid of machinery, recover these long-lost mines.

That they were formerly very productive may be deduced from a statement made in Gibbon, chap. lxix., that, in the time of Mohammed II., Ismail Beg, prince of Sinope, yielded to the conqueror of Constantinople, on his summons, a city and a revenue of 200,000 ducats, derived, it is said, chiefly from the copper-mines, an amount which, Gibbon says, appears enormous. The Turkish geographer of Anatolia has said after Strabo (p. 562), and the circumstance has been repeated in modern geographical works, that the people employed in these mines emit a horrible stench from their bodies when they come to the surface. This, it is evident, could only apply to former times; but when in the old galleries, we did not perceive any either uncommon or unpleasant odour. The Sandaracurgium\* of Strabo, which, according to that geographer, was rendered hollow even in his time by the continual mining operations carried on in its interior, was a branch of the Olgasys, Alkás Tāgh. Now as the Bakir Kúreh-sí are situated in the Yeráláh Göz, a rocky region, only, as it were, detached from the loftier range, from which it also borrows its name, it is not impossible that the places may be identical.

In the present day a few thieves and convicts only, besides some more respectable persons, are engaged in sifting and collecting from the refuse of former times stones that may again be sent to the furnace with some chance of profit. It is curious, in examining the vast piles of refuse among which they are carrying on their labours, to observe how regularly the stones have become stratified, and how frequently the formation of carbonate of copper †, even in a botryoidal form has taken place. We also found a specimen of bone passing into a substance resembling turquoise, from impregnation with copper.

The furnaces were formerly upon the brow of the hill, where the former refuse exists, but they are now 16 in number in the valley, close to the water, by the aid of which bellows, of small size, are made to work.

The town itself has a handsome mosque, and upwards of 200 houses, of which one-half only are substantially built, the remainder are the dwellings of poor miners, and often ruinous and untenanted. With the loss of its resources, the town has fallen into great poverty. Its latitude by the sun's mer. alt.  $41^{\circ} 47'$ ; its long. by chronometers  $33^{\circ} 50'$  E.

Nov. 1.—We left Bakir Kúreh-sí by the gap in Kırnák Tāghí,

\* *Sandaracurgium* signifies "arsenic works," and is therefore a mine; consequently hollow as far as it has been worked.—F. S.

† Bicarbonate of copper and hydrate of copper.

and descending into the valley, followed the upward course of a rivulet flowing N.E., and round a mountain called İkinjiler, composed of coarse clay-slates and ironshot schist, and covered with forests of pine and birch. We continued to ascend for a period of 3 hours, through forest and bad roads, made worse by increasing rain. The country then opened, and became less wooded; and after we had passed a high limestone cliff, we found the same rock beginning to abound, and forming a new feature in the district. A few miles farther, ostracite sandstone made its appearance, and we entered upon the plain of Daurikán, or Kúreh Kazásí (the Kádilik of the mining district), full of villages and well cultivated, and bounded by hills of pink and white cretaceous rocks.

*Nov. 2.*—The valley of Daurikán contains the river of the same name, which we had already seen at Júrimarán in a rocky district. It extended from N.E. to S.W., and contained fourteen villages, most of them large. We left the village of Daurikán the next day, and our route lay over hills of trap, black schist, and limestone, without wood, but pasturing cattle. Crossing two valleys we came to a low crest of wooded chalk hills, where is a guard-house; a little beyond these the valley of the Gök İrmák was spread out at our feet, studded with villages and plantations, and backed by the city of Kastamúni, above which towered an old castle placed upon a rock.

From Za'farán Bólí to this place, except in the low valley of the Júrimarán, our elevation had probably never been less than 2000 feet above the sea. At Bakır Kúreh-sí 2800 feet, and at Daurikán, on the high upland of Yéralah Göz, and near the sources of the river of the same name, an approximate observation gave 3240 feet. This fact, which had hitherto been rendered most apparent to us by the climate and vegetation of the country we were travelling through, was now made actually visible, for, without having made any particular ascent from the general level of our road, the head of the Gök İrmák, which river had still to flow some distance before it joined the Kızıl İrmák (Halys), and must then still have a descent towards the sea, was at a level of several hundred feet below us.

On our road to Kastamúni, where we arrived early in the afternoon, we passed the river of Dádáhi flowing into the Gök İrmák, which it exceeded in size, being about 10 yards wide by 1 in depth, while the river of Kastamúni is only from 7 to 8 yards wide where 1 foot deep, and becomes very shallow when spread over a large surface.

*Nov. 3.*—Kastamúni is a large Turkish town, situated in a valley from  $\frac{1}{2}$  to  $\frac{3}{4}$  of a mile wide, which it completely fills up: a



break in the hills which bound the city on the west formed another valley, which is filled up with suburb called *Hisár Ardi*,\* while upon the rocky cliff above stand the ruins of an ancient castle.

The total number of houses is said to amount to 12,000, giving a population of 48,000 persons. From our inquiries the Greeks have only 110 houses, and the Armenians 20. The former have a small church dedicated to St. John the Baptist. The Armenians meet for prayer in a *khán*. In the Mohammedan city we counted thirty-six minarets, and there are twenty-four public baths.

The principal trade of *Kastamúni* is in wool, of which the neighbourhood is said to produce nearly as good as that of *Angora*. The men also work largely in copper, and the women in cotton brought from *'Adanah* in *Cilicia*, and of which sails for shipping are made and sent to *Constantinople*. They also print cottons and tan leather, but in the latter article *Tásh Köpri* excels them. There are said to be thirty-two printing-houses, having from four to eight presses each, also twenty-two dyeing-houses, of which six are for red and sixteen for blue dyes. There are only two tanneries. The country produces no grapes: wine is brought from *Tósiyyah*, rice from *Tósiyyah* and *Bóí-ábád*, a little silk also from the latter place, and water-melons from *Tásh Köpri* and the gardens along the *Gök Irmák*.

There are in the city four monasteries (*Tekiyyeh*) of stationary, and two of itinerant *Dervishes*. The castle is a very rude structure, built of the same coarse sandstone as the rock on which it stands. The mortar is a mixture of lime and pebbles. Some of the towers, three of which are round, are nearly 50 ft. high; another is partly built of tiles, and some square ones, more especially such as flank the outer wall, are of better construction, and formed of larger stones, probably belonging to a more remote era than the rest. A plan was made by Mr. Russell, whence it appears that the castle is of an oblong form, 414 ft. long by 60 wide.

*Kastamúni* has always been under the Turkish dominion, the capital of a province or *sanják*, and was a long time the residence of a *páshá*, but, under the economical reforms of the present sultán, it has been made the seat of a *mutesellim* under the *Páshá* of *Angora*. Little more than a century ago the Christian inhabitants were expelled from this city and forced to take up their residence in a village on the *Gök Irmá*, still designated as *Gaúr Köi*. When re-admitted to live and trade within the precincts of the town they had no church, and only their old burial-ground, till under the present sultán, a *fermán* was granted, allowing them

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\* J. N., p. 648. Vulgo *Ardhí*.

to build a church and bury their dead near the abode of their forefathers.

The population and extent of *Ḳastamúní* claim some attention, though its situation is not among the most picturesque in Asia Minor, and notwithstanding its commerce is very inconsiderable. Some of the mosques and the new barracks rise above the surrounding houses, and are rather superior to common buildings; but the houses, although of two stories, are in general ill built; the streets are narrow and dirty, and the centre of the town is washed by a deep kennel, into which the filth of the whole place is collected. There are no open quays to enliven the scene, and only here and there a covered wooden bridge, across which the Mohammedan has to pick his way, lest he should wake the sleeping dogs, and be defiled by touching them.

*Ḳastamúní* is not unfrequently visited by the plague, and is always liable to bad fevers, more particularly malaria, which is said often to assume a very fatal type. At an altitude of 2350 ft. above the sea, the snow is said to lie two months upon the ground, and the summer to be very hot.

It is, however, in its past history that *Ḳastamúní*, with its commanding though ruined castle, presents itself to us with features of peculiar interest. The ancient title of *Constambol*, the city of Constantine has been claimed for it (Bell, vol. iv. p. 107). It is still called *Constambel* in a modern Greek work on geography published at Smyrna; and *Kastambol* is the most frequent name by which it is known out of the precincts of the town. Rennell even claims for it the still more ancient name of *Germanicopolis*, but it is better known in the pages of modern history under the name of *Castamona* (*Castamon*, Leake\*), as the patrimonial estate, if not the capital of an independent kingdom under the *Comneni* family, before that family attained the power and the eminence which upheld for a while the fate of a sinking empire (Gibbon, chap. xlviii.). And the same fertile district, secluded by mountains on every side, was also the stronghold of an independent prince expelled by *I'lderím Báyzíd*, re-instated by *Tímúr*, and again expelled by *Muḥammed I.*

We have already had occasion to comment upon the comparative geography of the river *Ḳastamúní*. This river, designated as the *Ḳarášú* on the maps, is known by the name of *Gök Irmák* from its sources, 8 hours above *Ḳastamúní*, to its junction with the *Ḳızıl Irmák* or *Halys*. At *Ḳastamúní* it is a mere rivulet 7 yards wide by 1 ft. deep, but 6 miles below it receives the river of *Dádáhí*, 10 yards wide by 1 in depth. The united streams flow onwards by *Tásh Köprü* and *Bói-ábád*, to the *Ḳızıl Irmák*. The

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\* A probable abbreviation of *Castra-Comneni*.

river of Sarpunja is placed by Kinneir as a tributary to the Ḳastamûnî river; but from all the information we could obtain, it appeared to flow into the Arâj. Kinneir first showed the connexion of the river of Ḳastamûnî with the Halys. Rennell by mistake introduces two rivers, one of Ḳastamûnî, the other of Tâsh Köprü, and both flowing into the sea at different places.

The weather was very cloudy and uncertain during our stay of 3 days at Ḳastamûnî. The lat. by the sun's mer. alt. was  $41^{\circ} 21' N.$ ; long. by two chronometers  $33^{\circ} 56' E.$ ; bar. 27.284 inches, indicating an elevation of 2400 feet: we also made observations for dip and magnetic intensity.

The rocks around Ḳastamûnî consist, below, of primary schists; above these are cretaceous rocks, white, red, or brown, with few organic remains. The upper beds of chalk alternate with sandstone conglomerate. This rock crowns the castle-hill, and passes, in the hills E. and W. of the town, into sandstone. To the W. of the castle-hill the sandstone dips  $7^{\circ} E.$ , but beyond this, and over the adjacent valley, the same beds dip W. at an angle of  $9^{\circ}$ .

The contrast of the dark-coloured schists with the red and white cretaceous beds furnishes some of the most remarkable features in the neighbourhood, more particularly in the glen at the N.W. extremity of the town.

Nov. 6.—We continued our journey, proceeding along the valley of the Gök İrmâk, which flowed with few windings to the N.E. about  $5\frac{1}{2}$  miles, at which point low sandstone hills advancing from the S. from the neighbourhood of Ḳastamûnî come down to the edge of the river, which, curving round the hills, afterwards take a course of E.N.E. We stopped at this point to obtain the sun's mer. alt., which gave the lat.  $41^{\circ} 26'$ . A little farther on the Gök İrmâk receives a small tributary from the S. The temperature of the water was  $13^{\circ}$  cent.; of the air  $13\frac{1}{2}^{\circ}$  cent.  $1\frac{1}{2}$  mile farther we crossed the same river by a covered wooden bridge, beyond which the river stretched to the eastward along a pleasant valley, cultivated, full of villages, plantations, and gardens. 7 miles beyond the bridge the river enters into a rocky ravine, and is lost sight of for about a mile, when turning to the N. of E. it enters upon the valley of Tâsh Köprü, surrounded by rocks and mountains, but wooded and cultivated in its centre, and abounding in villages.

Nov. 7.—Tâsh Köprü (stone bridge) is on the right bank of the Gök İrmâk, and is approached by a bridge 75 yards long, which formerly consisted of four arches; two of these now remain, and two others, which were carried away, are replaced by three low and badly-constructed modern arches: the river, which here flowed from W. to E., divided itself into four shallow streams.

The town is said to contain 1500 houses: we counted 10 minarets, 2 kháns, and 2 baths: tanners and blacksmiths form a large part of the population.

The number of architectural remains in Tášh Köprü attest an ancient site: old columns and hewn stones, cornices, &c., abound in the cemeteries. We visited a small building yclept a madreseh or college—a collection of hewn stones and remains of antiquity, put together in the form of a parallelogram, with an open space in the centre, and two rows of ancient columns, not two of which had capitals of the same order.

Near the building was a beautiful sarcophagus of white marble, 7 feet 9 inches long, 4 feet wide, and 3 feet 6 inches high, and ornamented laterally with wreaths encircling a mutilated human face: bulls' heads were sculptured on the sides and rams' heads at the corners, with bunches of grapes beneath. On the left bank of the river is a low hill, which is pointed out as having once borne a castle, of which there are no ruins at present. On a stone near the gateway is a mutilated inscription, of which only a few letters are legible. Mr. Russell also copied other inscriptions from the walls of the college, from a modern fountain, and one from the interior of a tanner's house. The following, which confirms the supposed identity of Tášh Köprü with the ancient Pompeiopolis, is inscribed on a large slab of stone inserted laterally into the wall of the building above alluded to as constructed of materials of former edifices and called the college. As an excuse for any inaccuracies, I should state that both this and the following were copied by Mr. Russell during a heavy shower of rain:—

ΑΓΑΘΗΤΥΧΗΙ  
ΚΑΙΟΝ ΚΛΑΥΔΙΟΝ  
ΓΑΛΙΤΤΙΑΝΟΝ  
ΤΟΝ ΠΑΛΛΙΚΟΥ ΑΓΡΟ  
ΝΟΜΕΑΝΤΑ ΦΙΛΤΑΤ  
ΩΣ ΗΒΟΥΛΗ ΚΑΙ  
ΟΔΗΜΟΣ ΤΗΣ ΜΗ  
ΤΓΟΠΟΛΕ ΩΣ ΠΟΜ  
ΠΗΙΟΠΟΛΕΩΣ...Ω  
ΑΝΕΘΕΝΤΟ ΑΝΔ ΡΙΑΣ  
ΕΝΕΚΕΝ.\*

The following was in the front of a fountain in the N.W. quarter of the town:—

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\* To Good Fortune. Caius Claudius Gallitianus, the son of Pallicus, the kind administrator of the country, the senate and people of Pompeiopolis, the metropolis, have dedicated on account of his courage.

L. FLAVIVS ASCLEPIADES  
PETRONIANVS HIC POSITVS EST.\*

ΛΟΥΚΙΟΣ ΦΛΑΥΙΟΣ ΑΣΚΛΗ  
ΠΙΑΔΗΣ ΠΕΤΡΩΝΙΑΝΟΣ  
ΕΝΘΑΔΕ ΚΑΤΟΙΧΕΤΑΙ.

It is well known that Kinneir, and after him Colonel Leake in his Map, identified Tášh Köprü with Pompeiopolis of the tables, and which site Rennell has sought for at Tósiyyah. The information given by the tables is so inaccurate, that, without an inscription, a coin, or monument, to satisfy the mind, the rest is all conjecture. If we take the distance given by the tables of Pompeiopolis from Gangra, the former comes nearer to Tósiyyah; but will the 27 m.p. given from Pompeiopolis to Sinope agree with the same place? Again, if Tášh Köprü (of which there now seems no doubt) be Pompeiopolis, it is much more than 35 m. p. from Gangra.

Having so far examined the antiquities of Tášh Köprü, we started, quitting the river flowing N.E., and began an ascent of the Ilik Tágh, a spur or rather portion of the Alkás Tágh, which here crosses the valley of the Gök Irmák, and unites with the Yerálah Göz, beyond which again, and nearer to Sinope, were some high and lofty pinnacles of limestone reposing upon primary schists.

Our general direction was E. by N., and we stopped upon an adjacent plain to take the sun's mer. alt., which gave for this place N. lat. 41° 29'. 400 yards to the W.S.W. was a small village of 7 houses called Khazíneh-dár Kõi (Treasurer-ville), and about  $\frac{1}{2}$  a mile N. 52 E., but separated by a deep ravine, the dismantled walls and crumbling fragments of a castle occupied the summit of a nearly insulated rock. This castle was named Kız Kal'ah-sí (Virgin-castle); not an uncommon name in the East, as, for instance, near Köprü, and probably referring to the castle's never having been taken. It appears to be the same as the Hışar I'má of Rennell, from which he named the chain of mountains which are now particularly known for furnishing the best masts for the Turkish navy, and consequently agreeing in this point with the Ilik Tágh.

Leaving the castle on our left we descended into a ravine with rivulets flowing to the Gök Irmák, where we found fragments, apparently of old arches, called Chekmák Kápú-sí (Tinder-box bridge); but whether a bridge or a defence to the defile it is difficult to determine.

Our ascent of the Ilik Tágh commenced from this point, amid rocks of mica slate, &c. We soon entered upon the pine forests, and attained the highest level of the range, where the barometer

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\* Lucius Flavius Asclepiades Petronianus is placed here.

indicated an elevation of 4000 feet. The only species of pine was the *Pinus pinea*. Some trees which we measured were upwards of 100 feet high, and 3 feet 4 inches in diameter, cutting into timber of 1 foot 9 inches square. Our ride through the forest was dreary and monotonous, and we only arrived after dark, and amidst the din of jackals, at Kāvāshah Tekiyyeh-sí, as its name shows, a convent of dervishes, of whom there were four, out of the inhabitants of about 15 cottages.

*Nov. 8.*—Started early up hills of crystalline schists, the country around being now more bare of trees and in part cultivated, but at an elevation of about 3200 feet. After travelling 2 hours through this tract we opened upon the valley of the Gök Irmák, which immediately upon leaving the mountains was as crowded with villages as when we last saw it. Limestone had for some time past succeeded to the pine-clad schistose rocks, and they were themselves now succeeded by trap rocks and altered formations; but the valley of the river derived a new feature from the predominance of vast deposits of detritus; the acclivities, offering little resistance to the action of rain and springs, were deeply furrowed by ravines without any vegetable covering, and presenting a curious succession of different coloured indentations.

At an elevation of about 1770 feet above the sea, and about 700 above the level of the river, we stopped to get the sun's mer. alt., which gave the lat.  $41^{\circ} 28' N$ . The hills around were clad with juniper (*J. Phænicea* and *J. macrocarpa*) and with dwarf and prickly evergreen oak. A little more than an hour's journey brought us to Bōi-ábád, a small town beautifully situated upon a tributary to the Gök Irmák.

*Nov. 9.*—Bōi-ábád contains about 300 houses, in which the population is said to consist of 1000 females and 800 males. The town is divided into 11 mahallahs or divisions, each said to have its mosque: this is an exaggeration. There are 3 kháns and 2 ballis. The town is rather scattered, which adds to its beauty, and occupies a valley to the E. of the rivulet. The bed of the latter is filled with luxuriant gardens, full of fine fruit-trees overrun by vines. The rivulet of Bōi-ábád is called Káz Dereh-sí (Goose-valley), and to the N. flows, in an open and cultivated vale about a  $\frac{1}{4}$  of a mile in width, to its junction with the Gök Irmák (Amnias); but to the S. it issues from a narrow and secluded vale, containing a large village bearing the same name. This upper vale of Káz Dereh-sí is separated from the valley of Bōi-ábád by the limestone rocks which bear the remains of the castle or hill-fort, and the rivulet passes from the one valley into the other through a ravine with perpendicular sides at least 300 feet in height.

Bōi-ábád appears to be partly a Persian name, in which lan-

guage A'bád means a city. Böi has scarcely a Turkish meaning; in Wallachia and Moldavia Boi or Boiavar is a name applied to landed proprietors or lords of the soil. The best-informed natives had no idea of the meaning, but the Turks corrupt it sometimes to Böivad or Boiavat, as it appears on some maps.\*

The castle, which is attributed by the natives to the Genoese, but bears no inscriptions, was long the seat of an independent chieftain. It still contains within its walls about thirty dwelling-houses, which are said to have been deserted only about 8 years ago, when its lord was a certain Husein, the last of the Chipawis† or Sipáhís (Gibbon, c. lxv.), a term used by the people of the country, and corresponding to the original of our Anglo-Indian term "sepoy." The last chieftain is said still to be alive in Constantinople; but his property was confiscated, and his followers have turned to the humble occupation of gardeners. When we visited this hill-fort, of which a plan was made by Mr. Russell, there was not a person within its walls, and the houses, still new although built of wood, were deserted as if yesterday: the pathway being overgrown with viper's bugloss (*Echium Creticum*), spurge, and other weeds, gave an almost painful idea of sudden desolation; but the inhabitants below spoke of the thing in a manner highly characteristic of the feeling at present predominant in Anatolia. "Of what use is it to live secluded on yonder mountain? Is it not better to dwell among gardens and corn-fields?"

By three sets of lunar distances we made the long. of Böi-ábád  $34^{\circ} 51' E.$ ; lat. by sun's mer. alt.  $41^{\circ} 27' N.$ ; variation  $9^{\circ} W.$ ; barometer 28° 8, indicating an elevation of about 1000 feet above the sea.

Nov. 10.—Continued our journey along the valley of the Gök Irmák, passing villages at almost every mile and a half, till we had travelled 4 hours, when we turned to the right, about a mile along the banks of a small rivulet, to the village of 'Alí Páshá-Shálí, where we stopped for the night, in a room similar to what we had at Böi-ábád, without a window, and dark as a dungeon.

The valley of the Gök Irmák averaged to-day a width of from  $\frac{1}{2}$  mile to 1 mile; and from its numerous windings, wooded hills, and rocks, its general luxuriance of vegetation, and its villages and corn-fields, furnished a continued succession of fine and varied landscape.

The recent breccia and sandstone here rose in hills to an elevation sometimes of upwards of 800 feet; and although at first a mere pebbly detritus, as we proceeded down the valley, the same

\* It is properly Bóyá-ábád, dye-town. Bóyá, colour or dye, is Turkish; ábád (abode), Persian. Such compounds are not uncommon.—F. S.

† Probably of the Chapwán family. Sipáhí is a Persian word, signifying "soldier;" misspelt *Spahi*, and *Sepoy*. It could hardly be changed into *Chipawi*.—F. S.

deposit assumed the character of true sandstone and sandstone conglomerate, rising often in lofty and nearly vertical precipices, in which the character of the beds varied much, from coarse to fine breccia, and from rude conglomerate rock to siliceous and calcareous freestone. From various circumstances there seems reason to believe that this valley had its existence, at least in part, anterior to the last igneous agency which disturbed the surface of Eastern Paphlagonia.

*Nov. 11.*—Quitting the valley of 'Alí Páshá-Shalí, we again entered upon that of the Gök Irmák, and passing Tahirán, now a village, but formerly a small Moḥammedan town, found the valley beginning to lose its dimensions, and to be shut up by diallage and euphotide rocks, supporting compact limestone, and advancing in wooded precipices or rocky promontories (Kará Deñín) upon the bed of the river. A little farther we came to the junction of the Gök Irmák and the Kızıl Irmák, which occurs in an open space; after this the latter having passed through high and precipitous rocks to the S.S.W. descends to the N. by E., and then suddenly sweeping round to the S., forces its way through a defile formed by perpendicular cliffs of limestone, called Kará Depeh (Black vale), while the rocks which it thus encloses to the S. are named the Adá Tagh (Island-mountain). The latitude of the point of junction of the two rivers by the sun's mer. alt. was  $41^{\circ} 22' N.$

It was our intention to have proceeded up the banks of the Kızıl Irmák to Hájí Hamzah, and from thence to 'Osmánjik; and notwithstanding the many representations made to us of the impracticability of this route, we were determined to attempt it. Proceeding, however, up the Kızıl Irmák, about a mile from where it receives the waters of the Gök Irmák, we came to the village of Beg Köi, beyond which the former river comes through perpendicular rocks of schist and limestone, which afforded neither passage below nor above on either of its banks. Under these circumstances we could not do better than proceed down the river to the ferry of Vezír Köpri, and, from that place, cut off the westerly bend of the stream towards Hájí Hamzah, meeting the river again at 'Osmánjik.

Accordingly we forded the Gök Irmák near its junction, and proceeded through the pass of the Kará Depeh. This pass, unless Paphlagonia extended farther east in the time of Xenophon, would appear to apply itself peculiarly to the description given by Hecatonymus, one of the ambassadors from Sinope to the Greeks at Cotyora, who said that Paphlagonia must of necessity be entered by but one pass, and that lay between two points of a rock exceeding high. The river runs through a gorge in a limestone range, which extends from S.W. to N.E., forming on the



S. bank a conical rock about 250 feet high, and then rises in a wide rampart of rock to the N.E. till it forms cliffs, at the distance of scarcely 2 miles, nearly 1000 feet in height. To the S.E. numerous rudely-shaped pinnacles of limestone crown the mountain summits, upon one of which there are some ruins, apparently of a monastic character, concerning which we could not obtain any information.

This defile has, in modern times, obtained notoriety from the frequency of the robberies committed in a neighbourhood so well adapted for such exploits; and this circumstance led the Turkish government to build a guard-house in the pass, which was tenanted by two useless veterans, who, however, gave us a hospitable shelter for the night. Long. by chron.  $35^{\circ} 14'$  E., lat.  $41^{\circ} 21'$  N.

From the upland plains of Iflání, at a mean elevation of 2500 feet above the level of the sea, we had descended to Kastamúní, at the head of the valley of the Gök Irmák, about 150 feet. In following the deep declivity of that hollow, in part filled with detrital deposits, already at Táš Köprí, a distance of about 24 miles, the level had descended 550 feet more; at Bói-ábád, by 800 feet more, and at the junction of the same river with the Kızıl Irmák, by 600 feet more; the level at the confluence, by barometer, being about 450 feet above the level of the sea: but through the rapids of Kará Depeh alone, the Kızıl Irmák descends at least 100 feet; the elevation at the Guard-house, below the pass, being only 350 feet, or 100 feet less than at a distance (by windings) of about 8 or 10 miles; and consequently having a fall of more than 10 feet to a mile. The river was flowing at a rate, by our measurements, of upwards of 5 miles an hour.

The influence of so rapid a decrease of elevation, combined, more especially, with the increased temperature of a valley where vegetation is protected by hills, the radiation of the sun from their sides, and the evaporation from numerous rivulets, is equally marked by the successive changes of the vegetable productions.

On the plains of Iflání, as previously seen, barley and wheat form the chief, if not, besides some culinary vegetables, the sole produce; but even at Kastamúní, in the valley of the Gök Irmák, maize, tobacco, gourds, and a few melons, are produced; grapes, however, do not ripen well. The same fertile valley, down to Táš Köprí, is for the most part cultivated, as far as to the base of the hills; while the water-side is occupied almost everywhere by villages and gardens, in which grapes begin to abound, and melons of various kinds are raised. Walnut-trees, deciduous oak, willows, and tall poplars are frequent.

The great forest of the Ilik Tágħ, stretching from the water-side up to an elevation of 4000 feet, consists almost entirely of pine-trees (*Pinus pinea*), which attain a height of upwards of 100 feet. These forests, therefore, are still, as they have long

been, the most valuable of any in the Sultan's territories for timber of that description.

In descending from the Ilik Tāgh to Bōi-ábád, some rocky tracts afford a flourishing vegetation of shrubs of cypress, two species of juniper and evergreen oak. The castle-hill is covered with spurge. The fruitful valley below affords food for the few silkworms kept in this neighbourhood; vines, without care or cultivation, climb over the tops of the highest trees; and the gardens of the Káz Dereh-si produce the most delightful fruits and vegetables in Anatolia.

In the valley of the Gök Irmák and the lower part of 'Ali Páshá Shálí, much rice is cultivated, as usual, in small fields, for purposes of irrigation: this, with that from Tósiyyah, supplies all the markets of this part of the country, and leaves a surplus to be shipped at Sínúb (Sinope), for the market of the capital. In this part of the valley the *Acacia spinosa* begins to make its appearance, and soon afterwards, with the evergreen oak, covers extensive slopes, and forms, together with it, the chief vegetation of the district. The larch is now not unfrequent in the ravines, and on the sides of hills a species of privet also becomes common—rose-trees abound; *Arbor Judæ* (*Cercis siliquastrum*,) is more rare. The *Astragalus tragacanthus* and *Acacia spinosa* render the thickets almost impassable. Broom and box are interspersed here and there; and that useful plant, *Rubia tinctoria*, flourishes under the hedges of madder, bramble, and privet.

At length on the banks of the Kizil Irmák, coarse grasses are replaced by the three-fingered grass (*Dactylaria dactylon*). The cypress becomes a tree of some size. The pine is succeeded by the *Pinus pinaster*, a stunted tree which climbs up the acclivities of the Kará Depeh, till stopped by vertical precipices of limestone, over which, again, it often shows itself, but in separated patches or solitary trees, with roots issuing from crevices in the rocks, at the foot of which, even at this advanced season of the year, a scentless but pretty-coloured pink was in full flower. The banks of the river were clad with *Syringa argentea*, and the *Tamarix*. There are no Oleanders, but wild vines, like the climbing plants of South America, convert the trees on the banks of the river into shadowy bowers. There is also some underwood, chiefly tamarisks and blackberries, with sedge and tall grass, which shelters many wild boars. The evergreen oak still possesses itself of pebbly promontories and declivities of detritus. These features in the distribution of the vegetation disappeared when we left the river to approach Vezír Köprü, and an undulating and low hilly country of schist was uniformly covered with a shrubbery of deciduous oak and juniper, as well as some privet, till the same soil was reclaimed by cultivation, through the industry and wants of the inhabitants of a town and numerous villages.

*Nov. 13.*—We travelled along the banks of the Kızıl Irmák, 9 miles from the guard-house to the ferry, which we crossed in a rude boat. There were few villages in this part of the valley. We passed a ruinous khán, and a bridge which had been commenced, but never completed.

The river at this point was 80 yards wide, had a current of about 4 miles, and was from 3 to 4 feet in depth.

Following the river a short distance, we came to a steep cliff advancing upon the river, which appeared, at the distance of a mile or two, to pass through lofty cliffs of limestone, somewhat similar to those at Kará Depéh. There is no road along the river's banks to Báfirah. Turning at this point to the S.S.E., we passed the village of Cheltíjak, containing about twenty houses and a mosque, and entered upon the country of low shrubs, previously described, reaching Vezír Köprü just as night set in, about 9 miles nearly S.E. of where we left the river's side.

*Nov. 13.*—The town of Vezír Köprü is situated in a hollow, containing a mere rivulet, which soon flows into a country of rude limestone rocks, while the more fertile district is backed to the south by the Tavshán Tághí. It contains about 1000 Mohammedan families, fifty Armenian, and twenty Greek, each of which sects has a church. The town is divided into quarters, sometimes separated by party walls; and the market is divided in the same way, each portion having regular gates for its protection. There is a bezestán, or covered market, for silks and fine goods, which is a tolerably well-looking edifice, with four domes built of tiles. At each of the gateways of this building a tombstone is dovetailed into the wall. One of them contains a mutilated inscription, and the sculptured insignia of a Greek priest. The other also bears an inscription, which, although turned upside down, was more legible:—

ΣΕΜΝΩΣ  
ΚΑΙΖΗΣΑΝ  
ΤΑΚΟΣΜΙ  
ΩΣΕΤΗΜ  
ΚΥΡΙΑΛΗ  
ΣΥΤΟΥΤΕ  
ΚΝΩΣΑΣΑ  
ΜΕΤΑΥΤΟΥ  
ΜΝΗΜΗΣΧΑ  
ΡΙΝΕΝΤΩ  
ΡΨΒΕΤΕΙ.\*

\* "Honourably, and having lived respectably forty years, Cyrilla, daughter of Sytus, who bore children to him. In memory [of him erected this monument] in the year 172."

There are no ancient buildings in the town, but some of the hewn stones alternating with tiles, which have been used in the construction of the baths, appear to be of better quality than are generally found in mere Mohammedan buildings. Fragments of columns are also not unfrequent. The four kháns are poor places; and only one of the four baths is good. The lat. by sun's mer. alt. is  $41^{\circ} 7' N.$ ; the long. by chron.  $35^{\circ} 35' E.$  The mean of the barometer was 29.100, and at this low elevation, of about 800 feet, cotton and mulberry trees are cultivated; and storks' nests make their appearance on the chimney and house tops.

Vezír Köprí was formerly called Kedí Kál'ah by the Turks; and 4 hours to the south there is a castle situated upon one of the highest and most conical peaks of the Tavshán Tághí, called Tavshán Kál'ah-sí (Hare-castle). We would have visited this castle from Vezír Köprí, but did not know of its existence till we observed it far away to our left, on our route to 'Osmánjik.

Nov. 15.—Our route lay up the valley of the river in a direction W. by S., towards the foot of the Tavshán Tághí (Hare-mount), with few villages and a scanty cultivation, also blocked up at a distance of 6 miles by rocky knolls of limestone. After travelling  $3\frac{1}{2}$  hours we came to the foot of Tavshán Tághí, and commenced our ascent amid forests of deciduous oak gradually becoming trees, interspersed with pine and beech. The ascent lasted  $2\frac{1}{2}$  hours, the rocks consisting of sandstone and limestone. The sandstone continues to the summit of the range, when it becomes laminar and schistose, dipping at a high angle to the S.W. At the crest the vegetation consists chiefly of small birch trees, covered with lichen, and in a state of decay, with shrubby *vacinium* at the foot. At the summit, the barometer indicated an elevation of 3690 feet above the sea. After continuing along the crest for upwards of an hour, we descended the opposite declivity, 680 feet, to Kósájak, a village situate in a ravine amid cliffs of schistose and limestone, and inhabited by charcoal-burners attached to the silver-mines of Gúmish Khán. A curious phenomenon exhibited itself here in a huge mass of limestone, about 300 feet long by 100 high, which lay detached upon the declivity of a hill of mica slate. It certainly was not a boulder-stone, and was more probably tilted up into its present position.

Nov. 16.—Continuing along the valley of Kósjak in a W.  $\frac{1}{2}$  S. direction, we descended gradually towards the valley of the Kızıl İrmák. At a distance of about 9 miles we entered upon a plain bounded to the N. and E. by limestone cliffs; to the S.E. was the defile through which the great Constantinople road is carried from Merziván to 'Osmánjik, which we soon afterwards joined at two or three straggling cottages called Hájí Hasan. The sun's

merid. alt. gave the lat. of the centre of this plain  $40^{\circ} 58'$ ; bar. 28·230.

From this point to the gap in the mountains above the valley of the Karchak Chái, about 5 miles in distance, the road lay to the S. of W. Hence the Constantinople road is carried by the pass of Menzil 'A'shikí to the N. of W., a point of importance in the construction of this part of the country.

'Osmánjik, with its trachytic pinnacles and castellated ruins, has been so frequently described, that we need not enter into any detail respecting it. The Kizil Irmák at this place flows from S.E. to W.N.W. Bajazet's Bridge (Báyazid's) consists of thirteen arches, and is 283 yards long, 8 wide, with water at this season of the year in only half the channel. The town has 300 houses, five mosques, and three kháns. The lat. by altitude of  $\alpha$  Polaris  $40^{\circ} 57' N.$

Nov. 17.—We pursued our journey southwards, following the banks of the stream for 10 miles, when we left it to the right, the river crossing through a gorge in the mountains formed by the junction of the Kırk Delím mountains and those of Iskilúb. The Kizil Irmák is in every respect a fine river, both below and above this pass, where we ferried across it on our way to Iskilúb; but it does not equal what would *à priori* be expected from a river of such a long course, and fed by so many large tributaries. In the valley of 'Osmánjik, and in that of Kánkarí, it is no more navigable than it is in the districts of the Kırk Delím, or the Adá Tágh. An exaggerated idea of the magnitude of this river has obtained credit in Europe from the vague reports of travellers, who have not adopted the test of actual measurement. Tavernier calls it a large river at Kesrá Köpri; Tournefort compares it to the Seine near Angora; Mr. Charles Vaughan estimated it pretty accurately at 160 yards at 'Osmánjik; and at a different season of the year it had appeared beyond Suaz, to some of our party, almost as large as it now was in the vale of Kánkarí. Several writers have called it Aitoe-su and Atoe-su;\* but below Angora we found it generally recognised as the Red River, or Kizil Irmák. The fact mentioned by Tournefort, and noticed by Rennell, on the authority of Hájí Khalífah, of its passing below the parallel of Angora, through formations of red saliferous sandstone, is quite accurate.

The sun's mer. alt. to-day gave the lat.  $40^{\circ} 50' N.$  The Kizil Irmák W. 700 yards distant; the pass in the mountains S.  $50^{\circ} W.$ ; and village of Kíjanlák N.  $12^{\circ} W.$   $\frac{1}{2}$  mile. On quitting the river's side we crossed some hills of trachytic rocks, and

\* A'tó-sú, or Aitó-sú (A'tó, water), is some local name. The common Turks name their rivers from the neighbouring town, and consequently the same river has frequently several different names.—F. S.

descended into the valley of Hamám Gözi (Warm-bath's eye), so called from warm springs situated at the head of the valley. This valley contained two villages of Turkománs, the first of that nation we had met with in proceeding southwards. At one of these (Mujteli) we stopped for the night. It is remarkable as containing some fragments of modern Greek buildings, columns, hewn stones, &c.; and in the side of a fountain there is a tombstone with scollop shell, a pilgrim's crook, and a deacon's badge, such as are used by the modern Greeks. Half an hour farther on was a village of Greeks, called Rúm Köi.

Nov. 18.—We approached Kırık Delím by a narrow pass in limestone rocks, in which were several caves; and on the eastern side was a large tomb hewn out of the solid rock, like the tombs of the kings of Pontus at Amasia. This huge relic of human labour was at a height of about 100 feet above the valley, and cut into the side of a precipice which fronted the N. It consisted of a hollow stone-coffin, hewn out of the solid rock, with which it was still connected at the top, but separated at the sides by a passage 4 feet 9 inches in width, and 31 feet in depth, but crossways, at the base, was 44 feet 9 inches. The tomb was ornamented with two lateral pillars, in low relief, and could only be entered by a small aperture about 4 feet high, and 15 feet from the ground; the total height being about 30 feet, and the width 44 feet 3 inches. Above the aperture was inscribed in colossal letters—

### IKESIOY\*

Some of the letters were painted red, and it is probably to the modern Greeks of Rúm Köi that this monument is indebted for the inscription, as well as for the addition of a red cross and some rudely-painted letters.

Our ascent up Kırık Delím took us exactly one hour, when we attained an elevation of 3090 feet, and from which point the country soon extended in a high alpine plain, with a small lake, and in good part cultivated. The land gradually lowers beyond this to the great plain of Chúrúm, which, in its lowest part, is only 730 feet below the crest of the Kırık Delím. The intervening country is destitute of wood, thinly peopled, and dreary in aspect, but in parts cultivated by different crops in rotation. The sun's mer. alt. gave the lat. 40° 37' N.; the Castle of Chúrúm bearing S. 30° E.

The Kırık Delím mountains have a nucleus of mica slate, but are composed principally of trachyte, earthy, compact, and pyroxenic, and of superimposed and tilted-up limestones. The chain is well wooded in parts with oak and pine. It extends from

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\* "Of Icesius."

the Kızıl Irmák, in the W., to the hilly district containing the silver-mines W. of Merziván, which by its southern branches separated Pontus from the Trochmian Galatia (Strabo, p. 561), and is considered by Rennell as a spur of Paryadres. But although from the plain of Merziván it has somewhat the appearance of a distinct chain, from so elevated a plain as that of Chúrúm, it loses its mountainous character, a circumstance which also applies itself to the Köseh Tágh, which, like low hills when seen from Chúrúm, descend, on the western side, down to the valley of the Kızıl Irmák, upwards of 1500 feet in a few miles. As Chúrúm has been visited lately by Col. Chesney and Mr. W. I. Hamilton, it need not therefore detain us long. The number of houses is said to amount to 1800, but they are generally of one story, and the population can scarcely be estimated at more than 7600. There are four kháns and as many baths, and we counted sixteen minarets from the castle. There are but few Christian families, and these are chiefly tilemakers and potters; there are also tanners at the place, and much wheat is sold in the market.

The castle, of which we made a plan, is nearly square, walled round, with towers at the angles, and two square towers between these on each side. The interior is occupied by dwelling-houses; the walls are of various dates, and have often been repaired or rebuilt, the original plan of the building having apparently been preserved. The principal stone is a fine compact white limestone, but an easily disintegrating sandstone has also been used. A great number of white marble columns has also been worked into the wall, besides many Greek tombstones, with crosses and sculptures, and various inscriptions, most of which are illegible. We copied one of the most legible, near the gate. The lat. of Chúrúm, by the sun's mer. alt., was  $40^{\circ} 31' 47''$ ; and the long. by chron. was  $34^{\circ} 51' E.$ ; the mean of the bar. was 27.374, indicating an elevation of about 2360 feet.

Chúrúm, after the subjection of Chapván O'ghlí (the well-known Turkomán chieftain of Yúz-ğat) was made the seat of a pasha, but soon sunk, from its want of resources, to a mere 'Ayyánlık, under which are Şáz, 'Osmánjik, Hájí Hamzah, Iske-lib, and Kaşár: the two latter are towns unknown to Europeans.

Crossing the plains of Churúm in a north-westerly direction, we approached the foot of the Köseh Tágh, which we entered by a valley planted with gardens and vineyards, and then ascended till we reached an alpine plain covered with pine, and having a village upon it. Beyond this we passed over the crest of the ridge at an altitude of 3330 feet, and then began to descend, passing a guard-house in our way. The sun's mer. alt. gave our

lat.  $40^{\circ} 33'$ ; and immediately beyond this we first entered upon beds of gypsum, which gave origin to a low, undulating country, with wide, grassy plains or nearly level uplands, occupied by migratory Turkomán tribes, and filling up the valley of the Kızıl Irmák from the pass in the Kırk Delím to the igneous rocks of Kal'ah-jik.

The formations of the Köseñ Tágh consisted of carbonaceous rock, &c., with altered limestones, and on the west declivity gypsum. It would be out of place here to enter into the detail of the mineralogical peculiarities, which we observed in these mountains: suffice it to remark that the various associations of the rocks are highly interesting. A short ride from the place where we entered upon the gypsum pasture lands, led us to the banks of the Kızıl Irmák, which we crossed without delay in a ferry-boat, and turned to the N. by W., the table mountain of Bayád bearing N.  $65^{\circ}$  W., and the pass of the Kızıl Irmák, through the Kırk Delím, N.  $65^{\circ}$  E.: we crossed similar marshy and grassy lands of gypsum till we arrived at the foot of the hills of Iskelíb. There was a great variety in the vegetation of these tracts, more especially with respect to that interesting point the social propagation of the same tribes; and it was evident that, as in the plains of Syria and Mesopotamia, a predominance of *Compositæ* and *Umbelliferae* characterized the autumnal vegetation, and that one or two species had generally a large local development to the exclusion of others; and that these predominant species differ from the slightest variation in the soil and position. The season of the year, however, precluded any very accurate researches of the kind, except to an experienced botanist.

Leaving the plains, we entered into a small valley enclosed by rocks, chiefly cultivated with vineyards: volcanic rocks began now to protrude through the gypsum, and were succeeded by volcanic tufa, and conglomerates, dipping N.E. The castle of the town of Iskelíb, most singularly placed, then broke upon us, occupying the summit of a conical hill of white limestone embosomed in the centre of naked volcanic rocks and conglomerates, the barren and stony declivities of which gave little promise of ever becoming the site of a town. Minaret after minaret, and houses crowding from the deep valley up the rocky side of the hills, gradually opened upon us till they were seen sweeping circularly round the castle, almost as far as the eye in the dusky eve could reach. It presented the very remarkable picture of a town perched upon a naked rock; but the gardens in the bottom of the valley were productive of all sorts of fruits, although wood was rare.

Nov. 21.—Iskelíb, commonly pronounced Eskilúp, contains



1500 houses, chiefly of two stories in height, with tiled roofs : of these about thirty are within the castle. The remainder of the town is much scattered through the valleys round the castle, each of which is watered by its own rivulet, and when not occupied by buildings converted into fruitful gardens. The number of houses was obtained from the *Shehr Kayási\** by Mr. Rasám, and the population may be estimated at 9000.

The castle or hill-fort is an old structure of irregular form, and very much dilapidated. The remains of towers at the opposite angles are still evident. The gateway and most of the walls have been repaired in modern times. At the southern foot of the rock on which the castle stands, and fronting the centre of the town, are several sepulchral caverns, two of which have some claims to elegance, being ornamented with sculptures : one of them is much mutilated, but upon the other two winged angels are clearly discernible, the one bearing a round cup, the other a branch. These two grottoes have also each of them two columns of incongruous orders, and, with the sculptures, are indifferent in execution, and evidently of the lowest Empire.

This town, like *Kánkarí* and *Qal'ahjík*, notwithstanding its size, its castle and antique remains, is in so secluded a spot in the centre of a mountain district, that it did not appear to have been visited by Europeans ; and some jealousy was shown on our reaching a place where no Christian subjects of the Porte are allowed to take up a permanent abode. The few *Rayás†* that pursued their avocations here lived in the *kháns*, for by a law peculiar to the place, founded upon some superstitious notion, no Christian is suffered to live there for more than nine months in the year. Their wives are consequently left at *Kánkarí*.

The weather was cloudy, with rain, during our stay at *Iskelib*, and did not allow of any celestial observations. The mean of the barometer was  $27^{\circ} 348$  ; mean temp.  $51\frac{1}{2}^{\circ}$ . Elevation about 2300 feet.

We quitted *Iskelib* in a dense fog, and after about an hour's ride we left the igneous rocks, and came upon upland gypsum, bounded to the W. by a hilly range, the central portion of which, with conical summits, was covered with a thin vegetation of pine-trees. At 6 miles from *Iskelib* we passed a large *Kayá Aghzí* (Pass's mouth), the weather had cleared up a little, and 2 miles farther, we came to the valley of *Chái Kóí* (River-town), which brought us nearer to the foot of the hills where large beds of pitchstone and pitchstone porphyry hills appeared among trachytic rocks. Ascending the next hill, a singular,

\* *Shehr ketkhudá-sí*, pronounced *Shehir kyayá-sí*, *i. e.* Deputy Governor of the town.—F.S.

† Properly *Ri'ayah*, or *Ri'ayat*, spelt *Ryot* by the Anglo-Indians.—F.S.

naked rock presented itself to our view, beyond and on the southern side of Kizil Irmák, isolated upon a plateau of gypsum, and bearing E. 65 S. We could not divest our minds of the idea that this was a castle, occupying the site of Stabium, which we must have left, although sought after diligently, very little to our left, on our road from Chúrúm to Iskelíb: the natives, however, knew of no castle in that direction, but the intervention of the river renders the intercourse very small. After a journey of about 15 miles, we came to the valley of Bayád, in which are four villages; on the side of the hill, Depeh; at the head of the valley where we passed the night, Naháden; 600 yards below, Yátikchí; and high up on the hill side to the W., Urulán, a small village. The four villages are united under the name of Bayád; and that of Naháden is enclosed by a dyke of pitchstone porphyry, running E. and W. in a kind of recess, while a small river coming from the hilly range flowed nearly from N. to S.; over it was a bridge with some appearance of former solidity, if not antiquity; and near the mosque of Naháden was a mass of pitchstone porphyry hewn into a singular form, similar to that of a baptismal font. On the summit of a hill close to Naháden, and separating the recess in which the village stands, from the upper valley of the river, were the rude walls of an old hill-fort, which must in its best day have been but a very rude structure, not improbably a stronghold of Gallo-Grecians. It is also said that there is a castle one day's journey N.W. from this place.

*Nov. 23.*—Our route lay over a country nearly similar to that of the previous day. Alternating hills and valleys in the gypsum formation bounded to the W. by hills of sandstone. At a distance of about 6 miles from Bayád we approached these hills, in the narrow valleys opening from which were several Turkomán villages. The sun's mer. alt. gave our lat.  $40^{\circ} 34' N$ . Beyond this we came to a deep ravine with a guard-house, succeeded by a dreary upland of unproductive gypsum, terminating in a valley of sandstone, and the village of O'lájik, where we stopped for the night. Here a change of soil is accompanied by fertility.

*Nov. 24.*—We started in a W. by N. direction, over cultivated lands, followed by plains of gypsum, varying our direction till we arrived at a spring at the head of the valley. Here we sent on our driver with the baggage-horses to Kángharí,\* while we ourselves turned to the S.W., by the village of Belí Bágh, descending into a deep valley composed of alternating beds of red sand sandstone and gypsum, among which there was a mine of salt which we had some difficulty in finding.

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\* Or Kánkarí. Pronounced vulgarly Chángrí; this substitution of the sound of *ch* for *k* is common among the Arabs S. of Başrah. See Niebuhr's Travels, Vol. ii. —F.S.

This mine occurs in clay beds in the gypsum, at an elevation of about 2500 feet above the sea, dipping about  $70^{\circ}$  to the N. The entrance fronts the S.: the slope varies, but mules go to the bottom of the mine with facility, and return loaded. The width varies from 7 to 28 yards, and the height from 4 to 6 yards, the works being carried on without order or regularity. The inclination at the bottom averaged 1 yard in 17. The total length was 400 yards; the direction very winding. There is a superintendent who receives from 1 to  $1\frac{1}{2}$  piastres per load: the people who come for salt have to dig for themselves. This salt, like that of Persia, which is found in formations of the same character and age, is remarkably pure, and in homogeneous masses, more or less transparent.

Salt is procured from other mines in this neighbourhood, but this is by far the most extensive bed. It is also procured in summer in the neighbourhood of Kánkarí from a small lake, round which the salt crystallizes when the water evaporates. The therm. indicated at the bottom of the mine a temp. of  $23^{\circ}$  cent., ( $73\frac{1}{2}^{\circ}$ , Fahr.), the temp. of the external air being  $13^{\circ}$  ( $55\frac{1}{2}^{\circ}$  Fahr.). The miners were working almost in a state of nudity. Their hammers were attached to very thin and flexible bars of wood, upwards of 3 feet in length.

The gypsum of Galatia resembles in its characters the gypsum of Paris in part, and still more closely that of Mesopotamia and Arabia. But laying aside the question of the division of that great formation into two distinct portions, there is little doubt but that the gypsum of Galatia or of central Anatolia belongs to the supracretaceous epoch.

The saliferous red sandstones, which are beneath the gypsum, and which constitute the great range of the Kánkarí hills, are, with the gypsum, broken up and altered by the eruption of trachytic and volcanic rocks, as in the neighbourhood of Iskelib; and the lower beds of the same formation are composed of a rudely-aggregated mass of trachytic and volcanic rocks, with chlorite and jaspers; so that on first investigation it appeared like a mere local breccia. It was only after examining the development which the same formations subsequently took in the hilly districts of Galatia, where the red sandstone conglomerate passes into red and brown slaty sandstones, together with red sand and saliferous clay, and occupies large tracts of country, that the real importance of the formation declared itself, and it appeared as a part of the same saliferous sandstone which Mr. W. I. Hamilton met with between Yüz-kát and Aḳ-seráí, and to which he called our attention, as the sandstone through which the Kızıl Irmák flows between Angora and Kašariyyeh.

Now, it is important to remark that although this sandstone,

like most saliferous deposits, contains few fossils, and that its age is difficult to determine, that still in their upper beds they alternate with the gypsum and its marls and clays; and this alternation in the low country near the Kızıl İrmâk, between Kánkarí and Iskelíb, is repeated as often as twenty or thirty times, establishing the contemporaneous origin of at least a part of these formations, as well as their almost immediate succession and close relation to each other: if, therefore, the gypsum can be demonstrated to belong to the tertiary epoch, so also must the accompanying sandstone and trachytic conglomerates; a result which will establish a further relation between the formations of the uplands of Asia Minor with the plains of Mesopotamia, Arabia, and parts of Persia and Syria. The non-occurrence of cycladic limestone, or lacustrine marl associated with the gypsum in south-eastern Galatia, cannot be properly considered till we have a more perfect acquaintance with those formations.

A couple of hours' ride over upland gypsum led us to a broad valley, crossed by a rivulet coming from the N. a little E., and met by another valley of less extent, having its rivulet coming from the N.W. The town of Kánkarí, of considerable extent, occupies the base of a promontory of breccia, which advances between the two valleys, and is crowned by a ruined castle, the interior of which is filled with dwelling-houses.

Nov. 26.—Kánkarí is, as just mentioned, a large town, containing about 3000 houses and a population of 18,000 persons. Out of these there are 30 Greek families and 16 Armenian. The Greeks have a church dedicated to St. Obadias: the Armenians have no place of worship. The Mohammedans have 8 large and some smaller mosques; there are 6 kháns and 4 public baths; the chief trade is in salt and wool; red berries\* are also an article of trade. The town is built like Iskelíb at the junction of two valleys, but is all grouped, at the southern foot of the hill, on which the castle stands, in one large and irregular mass, only diversified by a few buildings placed apart, as the new barracks are which occupy a low and unhealthy position in the bottom of the valley, whilst a fine natural plateau, out of reach of malaria, exists close to it. Another is a singular Mohammedan building, of which we made a plan. It is called the Mejíd Tâsh or "glorious stone,"† and appears to have been a convent of dervishes and a burial-place for holy men. It was said by a resident dervish to have been built in the time of Hárún el Rashíd, but an inscription on it shows that it dates from the reign of the Eyyubite sovereigns of Syria, and John Lascaris at Constanti-

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\* Probably *yellow berries* (*rhamnus tinctorius*).—F. S.

† There is probably some mistake here, as such a compound is very unusual.—F. S.

nople, not long before the overthrow of the Khalifate by the Moghuls.

At Yapráklı, 6 hours from Kánkari, 1 from Túelit, and 10 hours from Tósiyyah, an annual fair is held, which begins on the 17th September and lasts 7 days: it is celebrated over all Lesser Asia. This place is also noted among Christians as being the site of the tomb of the prophet Elias, a rather dubious point, but there are said to be no stationary houses at the place, which is described as being upon a mountain height.

Our stay at Kánkarı was prolonged a few days in order to get some astronomical observations, as we had been disappointed at Iskelib. The weather was, however, very unfavourable, generally cloudy and much snow falling. We succeeded in getting lunar distances from Pollux; two sets of sun's alt. for time at this place; and sun's mer. alt.: these gave its long.  $33^{\circ} 49'$  E., and  $40^{\circ} 35' 50''$  N. lat.: the mean of the barometer was 27.340; approx. elevation, 2350 feet.

Dec. 3.—We left Kánkarı in a dense white fog and hoar frost below: our road lay along the valley of the united rivulets, the north-western of which was 12 yards wide at Kánkarı. Soon after quitting the environs there is no cultivation, except in one small valley, 2 miles below, and then little else but vines and stunted tamarisks. The hills on both sides consist of gypsum, much waved and twisted in its stratification, with occasionally red sand and sandstone. After following the river about 6 miles we turned to the S.W. over a hill of gypsum; descended into the valley of Beg Dúzi; re-ascended, and crossing another bed of upland gypsum, again descended into the valley of Aḡghorán, which we followed in a S.E. direction. We were much hurt here at seeing some travelling Rayáhs scoffed at and assailed with the most contemptuous language by a parcel of boys and children. One more bed of upland gypsum brought us to the valley of the Túnái river, which there is reason to believe comes from the mountains about Yapráklı. It is a small stream from 12 to 15 yards wide, which empties itself at a short distance from that point into the Kızıl İrmák. The valley was about  $\frac{1}{2}$  a mile wide in some parts, less in others, and there were two *kışlás* or winter villages, one belonging to the people of Aḡghorán, the other to the villagers of İnánduk, whose actual residence we soon observed at a short distance up a small valley to our right. Traveling up the valley of the Yapráklı river in a direction of S.  $70^{\circ}$  W., we arrived in little more than an hour's time at Túnái, a small and dirty village, inhabited by guards, who are required for the protection of travellers at the time of the Yapráklı fair.

The fog had continued all day almost without interruption; at times we rose above it, on the high uplands, where the sun was seen through the mist; towards evening the effect of the colour of the sky, by the decomposition of the least refrangible rays, gave to the cliffs above Túnáî a beautiful and remarkable appearance. At daybreak next morning the sky was clear, the ground covered with hoar frost, and the summits of the neighbouring hills tinged with the first rays of the rising sun; but a dense bank of mist lay along the valley: in a few minutes the diffusion of vapour became general, and everything was wrapt in a fog, which continued more or less all day, only clearing up at intervals, but never leaving the sky cloudless.

*Dec. 4.*—The air at an early hour was cold, and our progress cheerless in a fog which scarcely permitted us to see the objects around; but had it been clear, there would have been little variety, for after leaving the valley we came upon a level upland of gypsum, on which for 4 miles there was only one stone, which birds had perched upon and whitened with their dung.

This character of country was, however, soon interrupted by the occurrence of igneous rocks which had broken the upland into fragments, leaving solitary round or conical hills with narrow valleys and passes between them, which became more extensive as we re-approached the gypsum: in these valleys there is either pasturage or cultivation. To the left was the large village of Chándur, before us a narrow rocky pass, beyond which a herd of camels were browsing or reposing with their heads towards the place of the sun, which was not visible, while to the extreme right was the village of Hájî Kõi, backed by low hills, and to the left igneous rocks and gypsum stretched down to the banks of the Kizil Irmak.

Crossing a more level country about 4 or 5 miles, with the remarkable conical hill, on which the castle of *Ḳal'ahjik* \* is placed, bearing S. 32° W., we arrived at that town, and were kindly received in the Christian quarter.

*Ḳal'ah-jik* is remarkably situated at the base of an isolated and nearly conical hill, upon the summit of which is a fine old castle filled with dwelling-houses, which in some places assist in forming part of the walls: upon closer examination the castle is found to be in a very dilapidated state: still, from the precipitous nature of the rocks on most sides, and its own strength, it must in ancient warfare have been a very strong place. The remainder of the houses are congregated round the base of the hill, which the town completely encircles, and, except on the southern side, it scarcely extends beyond the base, nor

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\* *Ḳal'ahjik* (little castle).

above a certain height up its sides. This place, which was sacked at the time that Ibráhím Páshá came to Angora, is now in a state of great poverty and partial ruin. It is said to contain 800 houses of Mohammedans and 60 houses of Armenian Christians, 5 of which contain 2 families. The town is divided into 14 maḥallahs or districts, each of which contains a mosque: there is but one khán and one public bath. The Armenians have a tolerable church, dedicated to St. John the Baptist, and in the neighbourhood are the ruins of an old monastery.

The circumstances which led to the partial destruction of this town were a general rebellion against their governor, Hájí Ahmed Bey, on the occasion of his levying an oppressive tax. The governor was besieged in his own house: a swivel was brought down from the castle, but having been found useless, the house was set on fire, and the governor (whose brother was at the same time governor of Kánkari) was ultimately killed by the populace. They then placed themselves under the protection of Ibráhím Páshá, who sent hither 4000 soldiers under Hasan Yárdahchí. The Turks, however, were enabled to send 10,000 troops from the kádilik of Kúrán, and the result was that the Egyptians, having a smaller force, were obliged to retreat, and the unfortunate town was exposed to a most severe retribution.

*Dec. 5.*—At 2 h. 26m., A.M., there was a shock of an earthquake, which threatened to tumble about our ears the house in which we were lodged. The movement was in undulations and not irregular, and the house rolled for a second or two like a ship at sea: the sensation was equally unpleasant, while the mortar falling from the rafters and dirt coming down the chimney, with the strain which the building underwent, gave a momentary alarm, but nothing fell near us, and there were only two houses thrown down in the whole place. The dogs began to bark in every direction, and people were running about half naked with lights in their hands. This first shock was followed shortly afterwards by a second, but so feeble as to be scarcely felt. The barometer, a few minutes after the first shock, stood at 27.588 in.; at 6, A.M., it indicated a fall of .056: the ensuing day was as cloudy and misty as ever.

At 2 h. 35 m., P.M., we had another slight shock, rather circularly undulatory; bar. 27.456, ther. 51°; no wind, but cloudy. 8 h. 46 m. a fourth slight shock: bar. the same.

*Dec. 6.*—At 8 h. 17 m. and 10 h. 26 m., A.M., an irregular rumbling shock: bar. stationary. At midday the weather cleared up a little, and we could distinguish the castle for the first time since we had been here.

*Dec. 7.*—2 h. 35 m., A.M., a rather rude shock: bar. 27.550; ther. 49°: mist as usual. There was no wind, and the weather

was calm both before and after the shocks: there was only upon one occasion a distant rumbling noise that accompanied the shock: there was not the slightest odorous exhalation perceptible, at least where we were. The effect upon the soil was imperceptible, nor could we hear of its affecting any of the neighbouring springs. The electrical condition of the atmosphere must have been, from the previously described state of the weather, subjected to great tension and great extremes, but we had no portable instruments to determine the extent of this phenomenon. On the night of the 3rd of December Mr. Russell had noticed a large meteor shooting from N.E. to S.W. We endeavoured to observe the direction of the oscillating wave by means of a basin filled with water, but the indications were unsatisfactory: to the feelings of all of us, however, the direction appeared to be from N.E. to S.W., which coincides with the direction in which the igneous rocks of the country have extended the line of their upheaving force, and is the same as the direction, not of the dip, but of the beds of the sedimentary formations.

The rock on which the castle and town are built is a trachyte. The only observations we got at Kal'ahjik was an altitude of  $\alpha$  Polaris, which gave its lat.  $40^{\circ} 9'$ , and one set of evening sights, which gave its long. by chronometer  $33^{\circ} 35' E$ .

However interesting it might be to watch the phenomena of an earthquake, we were not at all sorry at leaving this unstable place, on which the fog lay as thick as ever, but when we ascended the hills to the S.W. and got above it, we found that it occupied chiefly the valley of the Kızıl İrmák and some of the adjacent cold uplands of gypsum. At about 4 miles from the town we met, among the various igneous and altered rocks which we crossed, a remarkable and interesting formation of vitrified schist.

On our right we had a mountain now partially covered with snow; and passing by a guard-house, we stopped a little beyond it, to take the sun's mer. alt., which placed us in lat.  $40^{\circ} 1' N$ .

As this place is said to be infested by robbers, we were somewhat alarmed by the appearance of two horsemen armed with pistols, who came suddenly upon us; but when they saw that we were prepared to give them a warm reception, they left us unmolested.

A few miles beyond the guard-house we found the remains of a poor wretch who had been impaled there eight months before. Three other individuals had been impaled, at the same time as this miserable being, at Angora.

We descended from this point among rocks abounding in partridges, into a picturesque glen, at the head of which was a village where the robbers who rendered this district so insecure



in part took up their abode. The country after this began to improve, some cultivation showed itself, and we arrived after a journey of 18 miles, at the large village of *Hasan O'ghlân*, inhabited by *Turkomâns*, who are pastoral, and whose women make carpets.

Between the valley called *Dereh Sheikh*, beyond the impaled man and the village of *Hasan O'ghlân*, we had crossed the line of division between the *Kizil Irmâk* and the *Sakâriyyeh*. At the last-mentioned village there is an abundant spring, the water of which flows by *Angora* into the river of *Ak Köpri*. A hilly district, called *Hasan Tâghî*, bounds this valley to the S., and extends eastwards to the banks of the *Kizil Irmâk*.

The distance of *Hasan O'ghlân* from *Angora* is about 15 miles, the heights of *Hosein Ghâzi*\* bearing from the village S. 77° W. There are numerous fragments of ruins at *Hasan O'ghlân*, more especially wrought stones, columns, and capitals, but we found no inscriptions.

The soil for several miles is here composed of primary schists. These form the hill slopes and undulating country on which large flocks of *Angora* and other goats are pastured. This line of country is interrupted by *Hosein Ghâzi*, a lofty dyke of trachytic rocks, which, for miles in width, has altered the adjacent formations, and extends either in continuous masses or detached eruptive dykes and veins. Of the former is the *Bâghlûn* or *Baulus Tâghî*, the Mount of St. Paul, an upland district with a rounded outline and occasional cliffs, extending to the N. of *Angora*. Of the latter are the hills of *Angora*, four in number, on one of which stand the castle and town: the second is called *Khedrelez*, or *St. George*,\* and has on its summit a modern sepulchral chapel and ruins, supposed by some travellers to have belonged to a temple of *Jupiter*: there are also two smaller hills to the north.

There has been some discussion between two travellers\* whether or not the castle is commanded by an adjacent height: *Kinneir* affirming the fact, *Brown* denying it. The hill upon which the castle is situated is separated from that of *Khedrelez* by a narrow ravine, which is about 100 yards in width, and contains the rivulet of *Tabhanah* (corrupted from *Debbâgh Khânah Châî* or *Tannery river*). The height of the castle above the valley, by our measurement, is 432 feet. The hill of *Khedrelez* is higher than the castle by a few feet, and the distance of the two crests is about 270 yards.

The rivulet of *Tabhanah* comes from the S.E., and at its passage

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\* J. N. 643.

† *Khedrelez*, a colloquial corruption of *Khidr Iliyâs* or *Khizr Iliyâs*, is the name of a Turkish saint and hero, confounded by the Turks with *St. George* and the *Prophet Elias*.—F.S.

‡ *Bell's Geography*, vol. iv., p. 119.

between the castle-hill and that of Khedrez, has been dammed in by a strong work, which was also defended by towers, coming down from the castle (of which there are also others defending every possible rocky ascent), and connected by a wall which is carried over the next hill. Flowing onwards circuitously between Ajit Tághí and Khedrez, the rivulet curves round to the S. of W., is partly lost in irrigating the vegetable-gardens of Angora, and then flows N.W. till it joins the Chibúk Şú, immediately below the bridge of Aḳ Köprü (White Bridge), a modern structure, misnamed with respect to its colour, but reposing upon blocks of an older and better construction. The Chibúk Şú, so named from a village where pipes (Chibúk) are made, flows along a narrow valley of trachytic rocks, where are many farms (Chiftlik) and gardens, till it enters the valley of Angora, a mile above the monastery of St. Paul, and  $\frac{1}{2}$  a mile farther passes under Aḳ Köprü, N. 50° W. of the castle summit. The united stream is only 10 yards in width by about 2 feet in depth, but contains a good deal of fish.

It is needless to enter into details concerning the modern town of Angora, formerly Ancyra, and a city of considerable note in all ages of history. It has been visited and described by many travellers of ability, who have left little that is new to be explored.

Pococke and Tournefort have described the remains of Roman architecture, among which stands foremost a temple in honour of Augustus, of which the Latin inscriptions were copied by Pococke, and those in Greek by Mr. W. I. Hamilton, and copies are also said to exist in the Vatican at Rome. Several massive but irregular ruins of temples, guard-houses, or other public buildings, besides numerous inscriptions in the castle, and some rather rudely sculptured lions, belong probably to the Roman era, if they do not also illustrate partly the state of arts among the Galatians; but of that period few, if any, well authenticated remains appear to have been found.

Remains of Byzantine architecture are by far the most frequent: a column of little pretensions to beauty, and which imagination has dedicated to Lainius, the conqueror of Maximin; numerous sculptures in the walls of the castle; some inscriptions, and various Greek tombs and monuments, illustrate this period. Mr. Hamilton laboured hard among these interesting relics, and it is to be hoped that his researches will assist in elucidating the history of Angora.

Amid ruins of a more modern date are the castle as it now exists, a church of doubtful antiquity, and a subterranean viaduct of some extent; and in a small castle which occupies the highest part of the castle rock, are some old coats of mail of rude fashion and execution.

The modern town of Angora is divided into eighty-four

quarters, each having its great mosque or *jámi'*. There are from seventeen to eighteen *kháns*, and only three *Hamáms*. There was formerly a handsome *bezeştán* or market for fine goods, but it is now in ruins. The reports of various travellers concerning the population of Angora vary from 20,000 persons to 100,000, which is not surprising considering the difficulty of obtaining correct information. The *kadí*, chief justice of the place, whose authority upon such a point ought to be considerable, estimated the population at 54,000, of whom 5,000 only are Christians. But it may be doubted whether the Turks themselves keep any correct account.

From the Christians we obtained an estimate which came to nearly the same thing, 8,000 houses of Mohammedans, 3,200 Armenian Catholics, 1,200 Greeks, 800 Roman Catholic Armenians (called schismatic by their brethren), and 300 Jews. This estimate appeared to all of us to be nearly one half above that of the probable population. According to an Armenian doctor long established in the town, the population consists of 10,000 Mohammedans, 5,000 Christians, and 200 Jews. It appears from the new commercial arrangements entered into between Turkey and Great Britain, and the internal reforms that have been projected in consequence of this by the sublime Porte, that a regular statistical report of the empire is intended to be made as preliminary to other internal changes.

The length and softness of Angora goats' hair is evidently to be attributed to an extreme climate. Cold winters (complained of by Manlius; and in the latter part of December, 1838, we found the snow upwards of a foot in depth, and the minimum temperature,  $-16^{\circ}$  cent., or  $+3^{\circ}$  Fahr.) have everywhere the effect of lengthening the hair or fleece of animals, or of supplying them, as in the uplands of Thibet, with an under down; while the hot summers give to the hair its silky lustre and softness. It is remarkable that not only the cats, but also the shepherds' dogs of the Angora breed have long and fine hair. That well-known breed of cats has lately much diminished, their fleeces having been used to adulterate furs. The circumscribed limits generally assigned to the country of this breed of goats are, as far as we have yet seen, correct: they are not met with to the E. of *Kizil Irmák*. The quantity of wool annually exported amounts, it is said, to 500,000 *ókahs*, but of this only 200,000 *ókahs*, or about 500,000 lbs., are of the more valuable fleece.

The other articles of commerce are yellow berries, the fruit of the *Rhamnus catharticus*, which is much cultivated, more particularly in stony places, as on the hills of St. Paul, and even on that of *Khedrez*. The amount of produce is stated at 25,000

lbs. The roots of madder (*Rubia tinctoria*), for red dyes, mastic, tragacanth, and other gums, also form articles of commerce, as well as wax and honey. But the chief trade is in wool, merino twist, and goats' hides. The demand for British goods and manufactures is universally admitted to be very considerable.

The older European commerce of Angora was always very great. The tombstones in the burial ground of St. Paul's attest how many of our countrymen must have been engaged in it. It is difficult to account for its decline, unless from the want of success experienced, or from unwillingness to open communication in a place where consular protection has been abrogated now for a period of fifteen years. Almost abandoned by both English and French, who have now only a few native agents in the place, the Armenians have had the courage to establish a house of their own in London. When the Oriental question is settled, and tranquillity ensured to the country, there is little doubt but that commerce will spring up anew; and with the more activity as the resources of Anatolia, and of Western Asia in general, will be made better known.

The longitude of Angora was determined by lunar distances; and by two sets of observations with chronometers, to be  $32^{\circ} 50'$  E. of Greenwich, and the latitude by mean of two mer. alts. of the sun  $39^{\circ} 56' 30''$  N. The mean of the barometer was 26.922, giving an approximate elevation of 2,750 feet. The variation of the compass was  $9^{\circ}$  W. The magnetic intensity of the earth's surface was also observed.

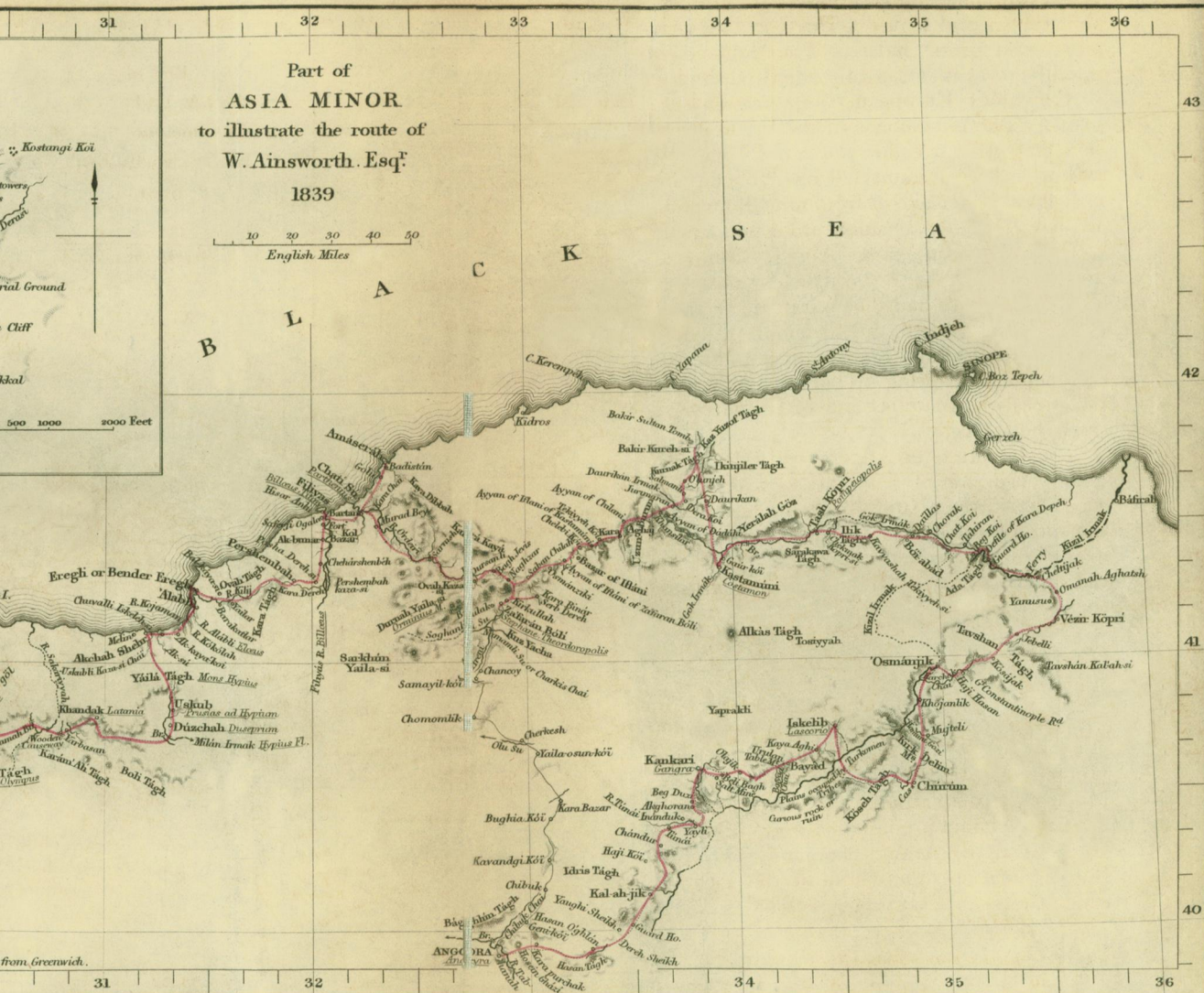
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[Mr. Ainsworth's MS. is accompanied by a map of his route, in eight sheets, on a scale of an inch to four miles; by a plan of Heraclea; with several plans of castles and other buildings by Mr. Russell; an itinerary by Mr. Pulsford from Za'farán Bólí direct to Angora; numerous inscriptions, and a list of the names of places in the Arabic character, with their explanation by Mr. Rasám; and also the whole of the astronomical observations on which the several positions depend, as laid down in the map.]

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Journey from Angora by Kaïsaríyah, Malátiyah, and Gergen Ka'eh-sí, to Bír or Bírehjik

Author(s): W. Ainsworth

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VII.—*Journey from Angora by Kaïsariyah, Malâtîyah, and Gergen Kal'eh-sî, to Bîr or Bîrehjik.* By W. AINSWORTH, Esq., in charge of an Expedition to Kurdistan.

DURING the three winter months that the party remained in Angora, various excursions were made to hills immediately in the neighbourhood of the town, in order to obtain bearings for mapping the country; among others we visited the summit of Chal Tâgh, 6 miles south of the city, whence we got a good bearing of Hasan Tâgh, a remarkable peak rising 8000 feet above the sea, 18 miles S.S.E. of Ak-Serâi, and 120 miles from Angora.

A more distant excursion was made to the mines of Ishik Tâgh, about 40 miles N. by E. of Angora, and lying 4560 feet above the sea; the route to which is laid down in the accompanying map.

On the afternoon of Tuesday, the 19th of March, our party, consisting of Mr. Russell, Mr. Rássam, and myself, accompanied by a khavâss bâshî and two khavâsses, sent by Zaïd Mohammed Pâshâ, as a guard through the Kurdish districts of Hâimâneh, quitted Angora, and travelling in a westerly direction, halted at Emîr Yamân, a village of twenty-six houses, 4 hours from the city.

*March 20th.*—Passed a small lake which it took 25 minutes to ride round; beyond this we descended from a low undulating country into the valley of Murtah Ovah-sî, which we had explored higher up on our excursion to Ishik Tâgh. The peculiarity of this fine and fertile valley is its being bounded to the W. by the prolongation of the hills of Ayâsh, and being suddenly closed up at its southern extremity by hills of trachyte, amid which the Châr Sû and the river of Angora effect their junction, while in the pass is situate the small town of Istânós.\*

At the entrance of the same pass is a bridge, at which point the great Constantinople road and that to Istânós, only  $\frac{1}{2}$  an hour off, separate. In descending it, compact uniform trachytes are succeeded by trachytic conglomerates, near Istânós, broken up into peaks and pinnacles, and backed by steep cliffs of rude but picturesque appearance. The town contains about 400 houses, 50 of Mohammedans and 350 of Armenians; it occupies the right bank of the river, and, confined by the cliff, forms a long narrow street, which is well stoned up, like a quay, and adds to the general appearance of comfort and cleanliness.

A remarkable rock, almost insulated from the cliff, advances over the lower part of the town. It is crowned by ruins of former times, covered with storks' nests, and burrowed by cavernous passages

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\* Vulgò Stânós.



difficult to reach. These caves measured, the first 9 feet by 7, the second 34 feet by 10, with an opening to the E.

Another series of caves, approached with some difficulty, stretched along the face of the cliff in three tiers. The first chamber was reached by a gallery on the face of the rock, 16 paces in length: from this another gallery ascended, partly in stairs, by the side of the rock 18 paces, where a little protection is given by a wooden railing. A long series of chambers were there entered, some having wells for water, and most of them fire-places. The whole extent was 145 paces; the chambers seven in number, the galleries four; but many of the chambers were again divided, as if for one or two families. There were no remains of antiquity discovered during this examination, and the caves appear to have been places of refuge from persecution, or a retreat for security or defence. In the burial-ground of the town there were some fragments of large columns and cornices hewn in trachyte, and one tombstone of white marble, with an illegible Greek inscription, probably brought from some other place.

The left bank of the river is occupied by gardens, and the new church, which does credit to the industrious Christians of the place, who toil chiefly in merinos and twist.

21st.—Mr. Russell and I rode out early in the morning, accompanied by a guide, to ascend the Góklú Tāgh, the highest mountain in this part of the country; turning to the left, just above the junction of the Chár Şú and Angora river, we soon quitted the trachytes and gained a barren country of chalk-marl and greensand, here and there disrupted or traversed by dykes of trachytic rocks. The district was hilly, with the usual character of friable or marly formations, rather abrupt and shingly declivities and round-topped hills; on one of these, to our right, were some huge stones, which appeared as if once piled together with regularity. After 2 hours' ride, crossing a small rivulet with red water, we began our ascent, and soon reached the village of Góklú, of about 40 houses. Here we obtained another guide, and proceeded in our ascent, crossing several glaciers, amid a dense fall of snow, accompanied by a strong wind from the N. After about  $\frac{1}{2}$  an hour we reached a Yaílâ, or summer station, near which was a cave celebrated in all the adjacent country, being distinctly visible at a great distance, from its occurring in the face of a cliff which rises almost perpendicularly to the summit of the mountain. The cave, however, only presented us with a wide semi-circular opening in indurated limestone, which also contained large veins of calc-spar and some travertino. The cave was 50 yards in width, and 20 yards in depth; and had also lateral small caverns, and nearly vertical passages of no great interest. It was fronted by a wall of stone, which enclosed a kind

of platform for keeping sheep or cattle. As the snow continued to fall so densely, that we could with difficulty see a few yards before us, we gave up any further ascent (the chief object having been to obtain distant bearings), and returned the same evening, both wet and cold, to the hospitable Christians of Istánós.

22nd.—From Istánós we visited the junction of the Chár Sû and Angora river,\* which occurs amid cliffs of trachytes, about 200 feet in height; and from thence we continued in a south-westerly direction over hills of the same character as yesterday; passed Tatlar, now a ruined village, on the left bank of the river, Atá-jik small villages beyond A'ná-Yûrt, also a poor village with small lake to the S. Beyond was Atà Tepeh (island hill), of volcanic origin of rather a singular conical form, which carrying tilted-up formations in a long line to the S., has caused a remarkable bend in the river, from whence its name: crossing the neck of the peninsula we again reached the banks of the river, backed here by the hills of Germesh, rising from 800 feet to 1000 feet above the plain, and a little farther on we came to the farm of the Kará Kóyunlí, or black-sheep tribe, consisting of about 20 houses enclosed in a square, like an Arab or Persian fort. The valley was bounded to the N. by the westerly prolongation of the Ayásh hills, composed of chalk, chalk-marls, and red and ochrous yellow sandstones, dipping N.W. at an angle of 25°, and preserving great regularity.

23rd.—We rode out early in the morning to visit the castle of Germesh. The river was forded with difficulty, although in summer it is said to be nearly absorbed by the surrounding friable soil. Our first visit was to the warm spring (84° of Fahr.), which issues from the declivity of the castle-hill. Over it there is a small bathing-house, with a circular dome, constructed of stones cemented by mortar, and apparently belonging to a remote Mohammedan era, although ascribed by the natives to the former possessors of the soil, under the usual designation of Genoese.

The ruins of a castle, apparently of Roman origin, occupy the summit of the same hill, which constitutes the most easterly point of the Germesh Tágħ. This castle, now in a very ruinous condition, was built of stone, cemented by good mortar, and consisted of an interior portion, 58 feet in length by 30 in breadth, bounded to the N.W. by steep cliffs, 36 feet deep, and to the S.W. by a wall 19 feet deep. This more approachable side was, however, defended by an outer rampart, 50 feet from the interior, and having three round towers, one of which rises to the N. of the highest part of the fort.

The summit of the hill, about 700 feet high, consists of

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\* Enkuri Sû, called at Angora Chibúk cháî (Pipe River).

hypersthene rock and basalt; the declivities exhibited trap, tufa, and conglomerates.

Returning to Kóyunlí, we joined the rest of the party, and proceeded over a level plain of river alluvium 4 miles, to the point where cliffs of chalk approach the river banks from the N., leaving a small and fertile plain, succeeded by Yókarí Turkhálí (Upper), a village in a chalk ravine, where the river is received among hills, and where there is also a wooden bridge. The hills soon become higher, with rounded summits, and rather steep declivities, being composed of indurated limestones in waved and contorted strata; and we entered a pass that presented some picturesque points of view. About 1 mile from the entrance is a copious hot spring, of very pure and clear water; and there are remains of an ancient road, that was in part hewn out of the rock. Beyond this a large cave is seen at an elevation of nearly 400 feet from the valley below, which contains the ruins of a building of strength, adapted for defence. This had been once the retreat of robbers, for whom the pass offers many advantages in the pursuit of their avocations. Near the exit of the valley the limestone reposes upon mica-schist and clay-schist, with quartz-rock. Beyond this is an open plain, in part cultivated, with the village of Ashaghí Turkhálí (Lower) to the right, bounded, to the N. and W., by a long range of uniform low hills of gypsum. The river, free from the rocky pass, now takes a more westerly direction; and we followed a middle route between it and the hills for about 4 miles to the village of Sarrubás, the residence of an A'yán, and where we were to obtain fresh horses.

24th.—We continued our journey along the same plain, with the river to our left, and gypsum hills to our right; the valley is about 5 miles in width, and bounded on the S. by the Germesh hills. After travelling from 5 to 6 miles the valley begins to narrow; and in the gypsum cliffs, as they approach the river, are numerous caves, used as folds for sheep of the Angora breed. There was then a sad mortality among these delicate animals; many were dying before our eyes, and the vultures were so glutted as to be too lazy to move.

Below is a bridge over the Angora river, by which a road is carried to Serví-Hişár,\* fording the Sakáriyah,  $\frac{1}{2}$  a mile further on. At this point both rivers enter wild and rocky passes in sienitic rocks, which here suddenly succeed to the gypsum; a narrow peninsula of the latter separates the two rivers, expanding as it extends upwards to the N. The Sakáriyah has a very tortuous course; and, after forming several small lakes, enters with its tributary into the sienites; after flowing through which, amidst falls and precipices, for about  $1\frac{1}{2}$  mile, the two rivers effect their

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\* Vulgò Serví Hisár.

junction, just before the igneous rocks are succeeded by an open plain, soon again shut up by other mountains.

By this excursion we determined that the site of Pessinus did not exist, as Col. Leake supposed, on the E. side of the Sangarius. Mr. Hamilton and M. Texier have, I believe, identified the ruins of Bálá-Bázár with that place; but some difficulties remain to be reconciled in the march of Manlius; and what is to be said of Plutarch's statement that Cato the younger *walked* in one day from Ancyra to Pessinus?

Our luggage, escorted by Mr. Rassám and two Khavásses, had gone direct from Sarrubás to the village of Mislú, fording on their way the Angora river (Engúrí Şú). Having accomplished our exploration, we had thus in part to retrace our steps between the two rivers, over low undulating hills of gypsum, with some limestone and breccia deposits, and then across a wide plain, extending from the castle at the eastern end of the Germesh Tágh, to the village above mentioned, situated at its western end, a distance of about from 12 to 15 miles in a straight line. At the western extremity, trap rocks no longer occupy the whole mass of the hills, but only the summits, and repose upon cretaceous marl. There is one hill further W. than the village; beyond it is the vale of the Saḳáríyah; and there are no other hills of importance intervening between this and the conical summits and serrated peaks of the Sevrí-Hişár mountains.

Mislú was once a flourishing village, probably on an antique site; but its walled-in gardens are now neglected, and its houses falling into ruins. About twenty only are still inhabited. The country is watered by many copious springs: partridges begin to abound, and ground-squirrels have made their appearance in numbers.

*25th.*—We ascended the pass in Germesh Tágh, S. by W., and entered upon a fertile valley, stretching from E. by N. to W. by S., and shut up at its eastern extremity by a ridge that unites the Germesh Tágh with the Sha'bán-úzí Tágh, of which bearings were taken from the Chál Tágh, near Angora. The latter is composed, like the former, of cretaceous rock and basanite. The Sha'bán-úzí has also sandstone on its southern declivity. Before us was a large village, also called Sha'bán-úzí. The rivulet of the valley is a tributary to the Saḳáríyah.

The ascent of the hills of Sha'bán-úzí occupied us about 1 hour. From the summit we had an extensive prospect. The undulating district of Háimáneh, the valley of the Saḳáríyah, the mountain of Ayásh, with the distant Elmáh, Idrís, and Sevrí-Hişár chains, formed the chief features. Descending the hills by the yáílá of the village of Yaghmúr Bába (Father Rain), and passing

some small caves with hewn arches, we reached a fine cultivated plain, where we first entered the district of *Häimáneh*. Our road lay along continuous fertile lands, producing scarcely anything but wheat and barley, till we reached *Karghah-lí* (Jackdaw town), a large village, the seat of the *Vaivodah* of the district, and having every appearance of much agricultural wealth.

26th.—The rich agricultural land around *Karghah-lí* does not extend far: we had not travelled an hour to-day when we found ourselves upon a high undulating upland of chalk, without wood or cultivation, and but few ligneous or vivaceous plants. The vegetation consisted of a few gramineæ and wormwood. The average elevation of this upland, from a number of observations, is 3000 feet. After travelling about 16 miles in a S. E. direction, we came to a valley with a rivulet, divided into two parts by a range of hills, through which the waters find their way by a narrow and precipitous pass of compact limestone. The lower and more northern valley contains two or three villages, the largest of which is called *Ujúk*, and was generally cultivated. The southern valley contained the *Turkomán* village of *Alif*, with tents and about twenty houses, but not everywhere cultivated. At this village we found numerous tombs, columns, cornices, and other fragments, evidently of Byzantine origin, and apparently indicating an ancient site.

From hence our road lay up the same valley till we turned to the E. to *Kádí Kõi* (Judge-ville), formerly the seat of government of the whole district of *Häimáneh*. At present it contains about forty houses, built upon the declivities of some barren hills of compact non-fossiliferous chalk, with hard friable limestone, dipping 15° N.

27th.—Having sent our luggage to the village of *Júlúk*, Mr. Russell and I started to visit some warm springs in the neighbourhood, where some remnants of antiquity were said to be. We reached them in about three quarters of an hour, and found, as indicated, a large hot spring, presenting the peculiarity of issuing from the top of a round or flat-topped hill, about 300 feet above the adjacent valley. This spring is inclosed in a showy modern building, with the usual dome-roofs, divided into two parts, 32 feet square; one for men, the other for women. The roof of that intended for the men has fallen in, the place being totally neglected and abandoned. The supply of water is considerable; its temperature is 41·5 Cent. (125° Fahr.), the air being 58° Fahr. The baths are inclosed in a space that is surrounded by a wall, 400 yards long by 300 in width. It was also formerly defended by bastions, now in a very ruinous condition. Within this inclosure there is a modern *jámi'*, or mosque, also going to ruin,

constructed chiefly with the stones of a Greek temple; there are also many ruined modern houses, and a burial-ground, with Byzantine tombstones, cornices, pillars, &c., but we found no inscriptions. By the side of this inclosed space there appeared also to have been formerly gardens and respectable houses; but now all is deserted, and not a being was to be seen around.

Our route from the baths passed up a narrow valley, where a few composite plants first appeared in flower, amid limestone shales tilted up at a high angle. From thence we commenced the ascent of Ardij Tágh (Mount Juniper), not however, much covered by shrubs of any kind, and composed of sandstone and limestone shales. The crest is elevated about 600 feet above the plain of Häimáneh; 900 feet above the valley below; and 3592 feet above the level of the sea.

An hour's descent brought us to the Turkomán village of Kizil Kõï, where we obtained, after some demur, a change of horses, and proceeded rapidly with these up a long valley, and over naked uplands, to the mountain of Gökcheh Buñár (Heaven-gate Spring), at the foot of which were tents of Kurds, newly arrived in these districts. Passing round, we reached the village of Kizil-jah Kal'eh (Red-dish Castle), where we were disappointed in not finding the castle which we had expected from its name and from report. It is merely one of the stone-forts so common throughout Lesser Asia. The mountain of Karajah Tágh was, however, now only a few miles from us; but as night was approaching, and we had still a long way to return to join our luggage, and as the plague also, which had been stated to exist at Kádi Kõï, and in various parts of the country, was again said to be very bad, in order to prevent our stopping at Kizil-jah Kal'eh, we were obliged to yield to the Khavásses and Súrujís, and turn back upon Chaltis, a large village, where we did see a few people sick: we then crossed a hill, and arrived late at Júlúk, a post-station on the road from Angora to Kóniyah, situated in a glen of trachytes. From the hill above Júlúk we had obtained some valuable bearings, by which, in the absence of astronomical observations, prevented at this season of the year by continually cloudy weather, we were enabled to connect Karajah Tágh with Chál Tágh, and Hosein Kází, near Angora, also with the Ayásh mountain, and then again with Shaṭ-Músa and the Ardij Tágh.

28th.—Issuing out of the glen we traversed a plain towards some limestone hills, and, leaving the baggage to pursue its way to Kará Gedík,\* we approached the foot of these to visit some sepulchral or monastic grottoes of little interest: crossing the hills we came upon Kürkli, a Kurd village, with more grottoes of a similar

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\* Properly Gedúk, i. e., Rent, Fissure.

character, and, proceeding along at a good pace, soon reached a narrow glen, composed on one side of indurated chalk, on the other of trachytic conglomerates. On the side of the cretaceous rocks are several large caves, arranged in tiers. The lower story contains a few large chambers, one of which is supported by square pillars, and has sepulchral recesses. Above is a long central chamber, 19 yards deep, with an arch in the centre, to the right what has apparently been the chapel, 7 yards long by 5 yards in width; while to the left a long gallery leads to a small chamber. This excavated monastery is in the same style, but not so complete as those actually existing at De'ri Za'ferán, near Márdín.

From hence, descending the trachytic hill of Kará Gedík, we joined our baggage at the village of the same name, and proceeded in a north-easterly direction 3 hours, over plains of monotonous outline, similar in structure and vegetation, till we gained Banam, a large village at the southern foot of Elmá Tágh, and between that chain and another of different composition and appearance, called U'rá Tágh.

29th.—The range of U'rá Tágh, which stretches from S.W. to N.E., south of Elmá Tágh, is composed of a central nucleus of serpentine and steaschist. These rocks are traversed by dykes of quartz rock, with abundant chalcedony, and have also tilted-up limestone, apparently of the chalk formation. On the northern side there is another association of rocks, consisting of basanites, associated with hornstone, flinty slate, and red quartzites. There is a large deposit of gypsum on the southern declivity. The barometer on the crest of the U'rá Tágh indicated an elevation of 4630 feet, or 861 feet above the plain of Angora.

In these mountains there have been several shafts sunk in search of copper; and furnaces formerly existed at Karghah-lí, which we had been particularly requested by Zaid Mohammed, Páshá of Angora, to visit and examine. We found only small, although numerous, veins of pyrites, which were not promising. The deserted galleries of the mines had become the retreat of foxes, which were much discomposed by our intrusion. The southern slope of the U'rá Tágh is covered with fir, which tree is rare on the northern side. Snow was also abundant on the southern side, especially where protected by low oak woods. We spent the night at Karghah-lí, a village of about forty houses, with abandoned gardens, and a fine spring issuing from the gypsum rock.

30th.—An extensive tract of low undulating country, almost like a plain, extends between the U'rá Tágh and the Kúrah Tágh, to the S.E. The fall of waters is towards the Kızıl İrmák; and the country becomes more hilly in the neighbour-

hood of that river. This district is called *Tabánlí*: the plains abound with the large field-partridge and with small bustards. In about the middle of it there is a small stream, called from a neighbouring village *Tól*. It is only 3 yards wide by one deep, but loses itself in marshes and small lakes before it joins the *Kizil Irmák*. On arriving at *Kúrah Tágh* we met with our old friends the saliferous red sandstones, which exhibited themselves chiefly as a coarse grit, upon which were superimposed gypsum, marl, and fresh-water limestones. This was on the outskirts; the central ridge is composed of red and brown sandstones, and sandstone conglomerate; and above, yellow marl and gypsum. During the passage of this chain, we were overtaken by a sharp storm, amid which we had yet to travel several hours. We descended to a small village, and entering a gorge in red sandstone, passed two beds of pink and white limestones, adapted for quarrying, and succeeded by dark-brown sandstone. We thence travelled along another cultivated vale, ascended over a hill-side, and made a rapid descent, in limestone gravel hills, to the large village of *Kará-jíler*, containing about 300 houses, all inhabited by Mohammedans.

31st.—About 2 miles from *Kará-jíler* is the celebrated bridge of *Cheshní* [*Cháshnigir*\*]. It occurs at a remarkable spot, where the river leaves an open valley, in red saliferous sand and sandstone, to enter a bold rocky pass in sienite, which is scarcely more than 1 mile in length. The bridge, said to have been erected by *Sultán Murád*, is built of red sandstone. It has one large and four lesser arches, at the water's ordinary level, one high up on a rock in the centre of the bridge, and some others still smaller on the level of the water. The width of the river there is 31 yards. The bridge at the highest point is 12 yards above the ordinary level of the water. To the eastward of the bridge is a large village called *Kapú Kõi* (Bridge-ville). The jurisdiction of 'Izzet, *Páshá* of Angora, terminates here, so our *Khaváshses* took their departure. The country we were now about to enter upon, belongs to the mines called *Denek Ma'den*, for which, after changing horses, we immediately started.

Our road lay in a N.E. direction, over a rude but not unpicturesque sienitic mountain, called *Begrek Tághí*. Below the river pass, we observed two small islands, a house, and ford. On these hills vegetation was forward; the dwarf almond-trees being about to blossom: on the summit we observed graphic granite and a dyke of basalt in sienite. Descending from *Begrek Tághí* we entered upon a remarkable granitic district, low with rounded whitish hills, but deep rocky ravines, with rivulets, and a gene-

\* "The King's Taster," in honour of whom, the bridge was named.—*Jehán Numá*, p. 626.—F. S.



rally scanty vegetation. This district is inhabited by the Jeríd tribe of Turkománs; and in one of the valleys we passed Gotovah, one of their stationary villages, with sixteen houses; beyond it Hájí-'Alí, and the Ḥasanlú Bábá-Sú, with fifteen houses. The country suddenly changed, after a rather long, but not unpleasant ride, when we reached the end of the granitic rocks, there being a fine cultivated plain, called Chápát Övah-sí. Beyond this we came to a hilly country of indurated limestone, in the midst of which, rising gradually to the heights of Denek, is the village of Denek Ma'den, where are the furnaces and the residence of the director of the mines. We had continued rain all the latter part of the journey.

The ores turned to account at Denek Ma'den are simply galena, more or less argentiferous. The mines in the neighbourhood of the village are now unproductive, the chief vein being at 2 hours' distance. The present produce of the mines, when in full work, is said to be equal to 1000 okes,\* of  $2\frac{3}{4}$  lbs. each, weekly; which quantity yields  $2\frac{1}{2}$  okes of silver. The village near the mines is in better order than most of those establishments; the charcoal is kept in a large wooden enclosure, a handsome fountain pours its waters into a small basin surrounded by trees. The Greek miners have a small church; the Moham-medans have also their mosque, but without a minaret. There were fourteen roasting furnaces, two smelting furnaces, and one open one, for the oxidation of lead and the reduction of silver. The mines have a large jurisdiction, including seven Kaẓálík,† from which men and fuel are obtained; and the produce of the taxes is also devoted to the maintenance of the same works. It would have been hard, under these circumstances, if they had not been made to return something to the government; but so jealous are the 'Osmánlís of their mines, that the Ma'den Aghá-sí had been removed, after three years' residence, only a few days before our arrival. The mines were formerly under the immediate superintendence of the government at Constantinople; but it was said that Zaïd Páshá was about to take the responsibility of them upon himself. Our reception at the mines was anything but civil, although we recognised personally some of the miners; on the contrary, much anxiety and jealousy was shown, so it was thought better to continue our journey next day, although I had intended to make some mineralogical researches. The elevation of Denek Ma'den above the sea, by our barometer, is 3340 ft.

*April 1st.*—Our road descended in a southerly direction along the valley of the Denek rivulet,  $4\frac{1}{2}$  miles, when we reached the

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\* Vulgo, Okah, for Wakíyah, from the Greek and Latin *uncia*.—F.S.

† Or Kaẓálík, whence the modern Greek *καταλίκι*.—F.S.

village of Jinál O'ghlú, belonging to the Jeríd Turkománs, whose tents we also met with in the recesses of the hills further on, where the valley expands considerably. At 7 miles from Jinál O'ghlú, the Denek rivulet falls into a stream flowing N. 50 E., from the conical mountain called Chelebi to the S.W., to join the river of Yúz-Kát.

Near this point was the small village of Merdán 'Alí, from which we travelled over a hilly uncultivated district, descended to find another tributary of the Yúz-Kát river flowing from a small lake, and then along a gravelly plain to the foot of granitic hills, where is the village of Aḥmed, or Hamíd, of fifty houses, inhabited chiefly by Turkománs. Its elevation is 2700 ft.

*2nd.*—We could not get the necessary quantity of horses from our Turkomán friends, so a part of the baggage was put into 'arabahs, or carts, drawn by oxen, which proceeded slowly up Mount Kará Góz (Black Eye) while we made a lateral excursion up one of the culminating points, to examine an old castle, but found only the remnant of walls, now divided into cells for sheep and goats. The labour of the ascent was amply repaid, however, by a good round of compass bearings. Its elevation is 4180 ft.; and the fort commanded the chain of Elmá Tágh, Idris Tágh, over Kal'ehjik and the Báránlí chain.

At the southern foot of Kará Góz is the village of 'Isá Kójah-lí, from whence we proceeded, still in a southerly direction, over a fine fertile plain, to Sogher,\* a small village where we were to obtain horses. This plain is bounded to the S. by the Kárván-seráí Tágh, with its castellated summits; to the W. by the lofty snow-clad and wooded range of Báránlí, terminating to the N.W. in serrated ridges, evidently sienitic; to the N., by the Kará Góz, and to the E. by the remarkable mountain designated as Bóz-úk. The plain of Sogher is at an elevation of 3320 ft., and has all the characters of a true alpine plain; marshy, with a vegetation of rushes and hedge-grapes, and no shrubs or flowering plants of a warm climate. We had a sharp frost at night.

*3rd.*—Crossed the plain to visit Tásh Kasmah: large quarries of marble, opened in ancient times, but now not in use, at the foot of the Báránlí chain. This mountain-range, rising upwards of 2000 ft. above the valley of the Kızıl İrmák, is composed of a nucleus of granite, sienite, gneiss and mica-schist, tilting up limestone and some sandstone. The granitic rocks predominate in the W. and N.W.; limestones in the central portions, where, in consequence, the outline of the mountain is now rounded. The rocky cones and castle-bearing pinnacles near Jemálah are composed of granites and gneiss. Mica-schists predominate in the

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\* Properly Şıghır i.e., Buffalo

easterly and south-easterly portions. The limestone at Tásh Kaşmah is non-fossiliferous, rather coarse-grained, but of a pure white colour. At the eastern end of the plain, the valley of the Kır-Shehr river opened before us; but we turned to the westward, to the village of Jemálah, of sixty houses; above which, upon a rocky hill, are the ruins of an old castle. This building proved to be an edifice of various ages, formerly constructed of large hewn stones of granite and gneiss, repaired and modified by the Mohammedans in former ages, and in a still more slovenly manner in modern times.

A pile of stones, which is said also to mark the site of a castle, called Gecí Kál'eh (She-goat Castle), occupies the summit of the mountains at the opposite side of the entrance of the valley of Kır-Shehr. At 4 or 5 miles down this valley is the village of Kızıljah Kõí, where the beautiful and renowned gardens of the once flourishing town of Kır-Shehr commence, and extend not only to the town itself, a distance of 5 miles, but also far beyond, much exceeding all published reports. The rivulet of Kır-Shehr is called the Kálíchí-sú and is not the Kónák, by some considered as the Cappadox of Pliny.

Kır-Shehr is a sad example of a town ruined by religious fanaticism. It never was very populous or rich, but, with gardens of unbounded fertility, possessed most of the necessities, and many of the luxuries, of life. These tranquil comforts brought around it, however, dervishes of many orders, to whom religious zeal bequeathed various edifices which, like villages, are, to the number of seven, distributed round the town—the resources of which they have drained and exhausted to the very last: what houses still remain are mud hovels of the lowest description; the only j'ami' is ruinous, and its minaret broken in half: 3 kháns are abandoned; the bezestein, which is a goodly building, is untenanted. There are six mesjids; and the population is stated to be from 3500 to 4000. There is only one Christian resident, who is employed in the manufacture of gunpowder.

The mountains N.E. of Kır-Shehr are called Khirkah Tágh, and are said to conceal a rock-fort, called Şefá Kál'eh. At a short distance from the town is a hot spring, amid some rocks of travertine, which have apparently owed their existence to hot water containing lime, iron, and other earthy matters in solution. The aspect of these rocks is very various; waved and contorted, with huge nodules of argillaceous ironstone. The spring is protected by a wall, and its water falls into a small bath. The temperature was 36° Cent., or 113° Fahr., the air being at the time 53° Fahr. The weather was clouded and rainy, and allowed of no observations at Kır-Shehr, although it is a point which we were very anxious to fix astronomically.

5th.—The ruins of U'ch Ayák (Three Legs), to which our attention had been directed by Mr. W. I. Hamilton, as existing between Kır-Shehr and Neú-Shehr, we ascertained to have been passed already in our journey, and that when at Jemálah we had left them 2 hours to our left. Mr. Russell and I accordingly, this morning retraced our steps along the Kálíchí-sú as far as the bridge of Jemálah, and continued thence N. 5. E. to Juhún, for which place we had a letter from the Mutesellim of Kır-Shehr, to procure us a guide. Passing over the south-eastern slope of Bóz-úk (the Bóz Tágh of Mr. Hamilton's informant), we gained in an hour's time the crest, from whence we saw an extensive plain stretching before us, in part cultivated, with here and there the encampments of Turkománs; and only bounded by the hills of saliferous red sandstone. In this plain, and immediately below us, was a ruinous and rather lofty structure, isolated at the foot of the hills, without any adjacent building or ruin.

Upon closer examination this ruin was found to be built of baked tiles, with a deep mortar bond, and to belong probably, to the Byzantine era. It appears to have been a monastery or church of the Byzantine Greeks; and was perhaps used in more modern times: but the dome has fallen in, leaving the cross arches to stand forth in nakedness; whence the present name of the ruin. There is a small spring and a collection of recent Mohammedan tombs in the neighbourhood. Bóz-úk Tágh is a granitic mountain, not so lofty as Báránlí, and consisting of nearly one isolated mount, with a stone fort upon its summit. All the country around appears to have been once in a state of defence; six castles are to be counted on the hills around the plain of Şogher. The neighbouring hills are composed of granite, gneiss, and mica-schist, supporting cretaceous limestone and red sandstone. The last elevation of the Báránlí, the Bóz-úk, and the Kárvánserái chains of hills, was posterior to the deposition of the supra-cretaceous red sandstone.

We returned to Kır-Shehr in the evening; the Hasan Tágh, with its bold and sharp, although not conical, but rather bicapitated summit, reflecting the gleams of the setting sun from its perpetual snows, was an object of constant attraction during the ride. Kır-Shehr appears to be at an elevation of 3095 ft. above the sea: and the adjacent plains may be considered as forming part of the great central plateau of Asia Minor.

6th.—Our route lay S.E. by S. over an undulating grassy country, at the foot of the Kárvánserái hills, the soil being composed of gravel, quartz, and primary schist; 3 miles from Kır-Shehr is a nearly circular mound of earth, 40 ft. high, sur-

rounded by the ruins of a wall 224 paces in circumference, with the remains of six lateral towers. In the same neighbourhood there is a spring, of which the water expands into a weed-clad basin. This remnant of an ancient fort, or guard-house, is called Göl Hişár (Lake Castle). Passing Emírlar village of twenty houses, near the right bank of the Kızıl Irmák, here flowing through red sand and sandstone, we arrived at Mújúr, the ancient Mocissus (?).

Having about 600 houses, Mújúr is distinguished as a *kaşabah*, or market town, the intermediate between a city, (*Shehr*;) and a village, *Köi*,\*—a word that is variously pronounced in different parts of this country. Mújúr is built upon a calcareous freestone, easily wrought and quarried. Caves and subterranean dwellings begin to make their appearance here. There are many gardens in the neighbourhood; and a little higher up the valley, is a mound, the probable site of the castle of Mocissus. In other respects, remnants of antiquity are rare. The first time for many a day, the weather began to clear up, probably from our getting more southward; and we obtained a meridian altitude of the sun, giving for the latitude of Mújúr  $39^{\circ} 5' 40''$  N.; its elevation being 3140 feet.

Leaving Mújúr, we passed Kurú Göl (dry lake), in a valley, a small village with caves, and beyond it Kurú Kúm (dry sand), another small village entirely inhabited by Troglodytes, and arrived in the evening at Hájí-Bektáš, a holy spot, situated in a high part of the country, and visible a long way off.

Hájí-Bektáš is a remarkable example which may be adduced against the constant outcry that taxation is the sole cause of poverty, and of the present ruinous condition of villages and towns in Lesser Asia. Kír-Shehr, which, with its luxuriant gardens, fine soil, abundant water, and warm exposure, might be made a mart for the production of silk, we have seen, is but a wreck. When asked why the town was so prostrate and fallen, the ready answer was, excessive taxation. At Hájí-Bektáš, no one complained: on the contrary the people boasted of their privileges and prosperity. The tomb of Hájí-Bektáš, one of the great Turkish Saints, and founder of an order of Dervishes, has saved this Kasabah from taxation; for all its inhabitants are required to pay, is for the support of the tomb; and a portion of the salt-mine of Túz Köi is also assigned for the same purpose. Yet notwithstanding these advantages, every other house is, as usual, a ruin. The 'ayán has built himself the only stone house, while the inhabitants, having little to pay, work still less, but sit in listless

\* The *q* in *köi*, and several other Turkish words, is pronounced like the French *eu*, or German *ö*.—F. S

groups, sunning themselves and smoking through a day's existence. The whole appearance of the place is that of unproductiveness and idleness. The tomb itself, which it ought to be their pride to have in a good state of repair, is allowed to crumble into ruins.

There is close to this place a high mound, in part composed of loose materials piled up upon strata of red sandstone, and surrounded by a moat or ditch. This mound is called *Kará Kavuk* (Black Bonnet); and by Rennell is identified with the site of Gadasena, a place anciently renowned for its sanctity, as this place is now (Strabo, p. 537); but we are, from various circumstances, more inclined to place Gadasena at *U'ch Ayák*.

*Hájí Bektásh* is situate at an elevation of 3780 feet above the level of the sea; Mount Argæus bearing S.  $52^{\circ}$  E., *Hasan Tagh* S.  $32^{\circ}$  W. by compass.

*8th.*—In order to shorten a great bend of the *Kizil Irmák*, the early part of our route to-day was mountainous, by the conical hills of *Aká-juk*, composed of quartz reposing upon gneiss and mica-schist. On descending upon the plain of the *Kizil Irmák*, we passed the village of *Salándah*; and arrived, in time to obtain a meridian altitude of the sun, at this great bend of the river, which has so long led geographers to suppose that there was an eastern and a southern branch of it. It is in  $38^{\circ} 48'$  N.

The low country near the river was occupied by sandstone and cretaceous rocks, in nearly horizontal strata. Keeping along its banks, we were ferried over at *Yárapasón*, where it is about 400 yards in width, but very shallow. *Yárapasón* at present contains about 300 houses, and is built along the side of a cliff composed of a friable light pink-coloured sandstone, supporting cretaceous limestone. The same cliffs extend in a sort of semi-circle, for nearly a mile, everywhere perforated by caves of various dimensions, a few of which are ornamented with columns and devices, but we found no inscriptions. At the eastern extremity, the rocks have been denuded, leaving the harder and coarser material in the form of numerous cones and heaps, of from 10 to 30 feet in height. Many of these contained also a separate grotto, often sepulchral. *Yárapasón* appears to be the *Osiana* of the tables.

In our route to *Neú-Shehr* (New Town), we passed a ravine still more remarkable for the curious forms in which the same friable rock presented itself. Sometimes truncated cones balanced huge masses of rock upon their points; and at other times they were wrought, apparently by the action of the elements, into fantastic shapes, in which the resemblance of lions, frogs, lizards, and birds, might be traced. As a proof of the near approach to truth exhibited by some of these forms, it may be mentioned that

one of our party was thoroughly impressed with their having been sculptured by the hand of man, and our sūrujī insisted upon their being the work of a gaur.

9th.—The origin and correct etymology of Neú-Shehr, or Nev-Shehr, has been given by our learned Foreign Secretary, Mr. Renouard, in Mr. W. I. Hamilton's memoir.\* It is a pleasing and cleanly town, situated at the side of a bold ravine, and itself rather darkly backed by high cliffs of volcanic rock. The Greeks, who form a considerable portion of the community here, appear to have congregated into the "new city;" for all the numerous and various troglodyte villages in the neighbourhood, are now, for the most part, as Sátlav, Yárapasón, &c., abandoned by their original occupants. Neú-Shehr contains 2000 houses of Mohammedans, 800 houses of Greeks, 60 houses of Armenians, 2 large jámi's, 1 greek church, 9 kháns, 1 bath, 6 mohammedan schools, and a quadrangular castle, with round towers at the angles. In a commercial point of view, it is, when compared with other towns of the interior of Asia Minor, a very flourishing place. Up the ravine, is the small village of Górah; and downwards, at a short distance, the picturesque troglodyte village of Nár, or the pomegranate. Neú-Shehr is in latitude 38° 37', and at a mean elevation of 3940 feet.

10th.—We had intended making an excursion to Urgúb, to see the curious rocks described on that route by Mr. Hamilton, and earlier travellers, but it snowed all night and all day; bar. 25·510 inches; mean of ther. 42°. As we had now quitted the ancient Morimene and Chammanene, it is important to make one remark upon the hydrography of these provinces. Pliny (lib. vi. c. iii.) mentions the river Cappadox as forming the boundary between Morimene and Galatia. Rennell identifies the Cappadox with the Kardash Cesme (Karindásh Cheshmeh) of Tavernier, on the left bank of the Kizil Irmák. Colonel Leake, and most other geographers, have a large river named Kónák, flowing into the Kizil Irmák, between Kír-Shehr and Cháshnigír Koprí (on the right bank). This does not agree with our observations; for in that interval we met with only two large rivulets, both of which were feeders of the Delíjah Irmák, or Şú (Maddish water), which is a large river on the road from Angora to Yúz-Kát. It appears thus that the Cappadox corresponds with the river of Kír-Shehr, or the Kalichí-sú. There is, however, a river called Kónák, which has its source near Yúz-Kát; and, flowing past Búlák and Imlar, empties itself into the Kizil Irmák, between the parallels of Kaïsariyah and Urgúb.

11th.—Having been detained by continually bad weather, we

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\* Geographical Journal, vol. viii. p. 148.

rejoiced to-day at a little improvement, our next steps taking us to the salt mines, and thence to the lake of Kóch-Hişár. The Shehr-Kyayási (ketkhodá-sí)\* gave us a little trouble previous to our departure, having asked us for 400 piastres for the delay; also requiring two piastres per hour for horses, the ordinary post price being one piastre; and further asserting, because Mr. Russell had been a little unwell, that we had brought the plague into the town. These matters were not arranged without some discussion with the mutesellim.

12th.—We travelled four hours in a N.N.W. direction, over a plain of volcanic sand, and extended formations of basanites, amid which rose curious denuded hills, to Túz Kõi (Salt Ville), near the banks of the Kızıl İrmák. Close to this village are the salt-mines, to which the attention of the expedition had been called, as being near Hájí Bektásh. The salt occurs in a powerful bed, the extent of which it was impossible to judge of, as none of the actual shafts go to its floor, although many display its roof. This bed occurs in a stiff yellow clay, sometimes bluish coloured, with abundant crystals of gypsum, which is superimposed upon it in horizontal beds, a little to the east of the mine. There are about seven shafts now open: these are distributed, in a rather curious manner, round the sides of a pit formed by the excavations of former years; and they run in to various depths, from 20 to 100 feet. The salt bed was about 40 feet below the level of the hill; the galleries are carried down at a high angle of inclination; and the salt is taken out in baskets, carried up rude stairs cut out of the clay. There was also a shaft at the bottom of the pit, but it has long ago fallen in, and is now the grand receptacle for rain water. While Mr. Russell and I were at the mines, there came on a severe thunder storm: torrents of water came pouring, in a few minutes, into the pit from several sides at once; the soft clay gave way in large masses, and several slips occurred round the sides of the pit. It appears very likely that works so carelessly carried on, will, some day or other, be overwhelmed all at once.

I shall not venture further here than to state that these salt deposits are evidently of a supracretaceous or tertiary era. The geology of all Garsaura, or Garsauritis, is of a most interesting character; but, notwithstanding the intimate connexion of that branch of knowledge with physical geography—here affecting not only the general features of the country, but also the dwelling-places of its inhabitants—I shall not dwell upon local peculiarities for fear of repetition; but will afterwards, in as brief a *résumé*

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\* This Persian word is always shortened into kyayá by the Turks. It signifies "deputy locum tenens."—F. S.



as possible, endeavour to establish the chief points in the history of these remarkable rocks.

14th.—Our route lay S.W., up the valley of the Túz-Köi rivulet, containing fresh water, and passing Kizil Köi, a village of thirty dwellings, chiefly caves; and Chiftlik,\* another small village, in part of caves, in 2 hours we reached Tátlar. This place has been already described by Mr. W. I. Hamilton.† I have only to notice the perfect colouring of the paintings in the cave, where is the old Greek MS.; the existence of a castle, on the top of the cliffs, and a kind of dirt-bed between the sedimentary rocks and the basanites.

From Tátlar our direction lay N. 60° W., over undulating downs of basanitic pebbles. At 4 miles is Chular, a Turkomán village of thirty houses, by side of rivulet; and about 3 miles farther, we entered a rocky pass of sienite, with a poor village. These hills are called Táš-Teller, and are almost entirely sienitic, with the rocky serrated outline generally peculiar to such formations. We travelled along a wide and monotonous plain, upon which many camels were feeding, extending from the foot of the Táš-Teller to that of the loftier mountain of Akájiķ, both of which had furnished us with bearings ever since we reached Kír-Shehr. The same evening we arrived at Šári Karamán, the seat of a vaivodah, sent hither to govern the Turkomán tribes, and not appointed by themselves. The dogs were very ferocious: one of them tore a large piece out of Mr. Rassám's coat. The people were only a little better.

15th.—Crossing a bridge over the rivulet of Akájiķ, a gentle ascent led us to Búz-Khur, a village of caves, with ruins of a khán. On our left was the mountain of Kharín; and before us, and extending to the limits of the horizon to the right, a nearly level plain of cultivable and in part cultivated land. At Dómánlí, distant about 3 miles, the face of the country altered; and at Danishmanlí, a village of twenty houses, 2 miles further on, were hills of sienite, rather remarkable, inasmuch as impacted masses of diorite, passing into fine-grained sienite, are distributed throughout the formation, which itself consists of small grains of hornblende, amid large crystals of feldspar. A rocky range of sienite extended hence to A'yánlí, the seat of the A'yán, containing about twenty houses, where we arrived well drenched by the rain, which fell incessantly all the latter part of the journey. Half an hour to the N.E. of A'yánlí are some ruins, and part of a Byzantine church. The natives know no name for the place, save Kilísá, 'the church;' and it is from thence that they draw

\* *Chiftlik* means as much land as can be ploughed by a yoke (chift) of oxen: it is therefore only applied to these caves as habitations.—F. S.

† *Geographical Journal*, vol. viii. p. 147.

the marble columns which decorate their rustic burial-ground. This site appears to be upon the cross-road which led from Parnassus to Archelais Colonia, and which in this district, contained the stations of Ozzala, Nitazus, and Ardistana. The direct distance from A'yánlí to Ak-Serái is 30 miles, which approximates to the distance of Ozzala; but, considering the inequalities of the soil, more with Nitazus, the two stations not being very far from one another.

16th.—A fall of snow set in in the evening, and continued till the morning, remaining on the ground and on the hills at A'yánlí, at 3800 feet above the sea. We did not, in consequence start till after 10 A.M. (it was still snowing hard, with a cold northerly wind), over an undulating district of granite and sienite, reaching only the village of Sipáhiler, a term applied in Asia Minor exclusively to horse-soldiers. We were here kindly received by the inhabitants belonging to the Turkomán tribe of Sheraklí, of which we were the more sensible, as we had left the Dómánlí tribe at the last village, on account of the ill-feeling exhibited towards us.

Sipáhiler, a village of about sixteen houses, at an elevation of 3580 feet, is situated at the foot of a range of sienitic hills, which rise about 800 feet above the village. This range is called the Kójah Tágh; and the natives point out three hill-forts upon different rocky summits, which were, however, mere accumulations of stones, without masonry. One of these is called Chákchák Kal'eh-sí, and another Bóílújah Kal'eh.

17th.—From the upland, at the foot of the Kójah Tágh, along which we continued our route this morning, we had a fine prospect of the Kizil Irmák, and were enabled to connect our present journey with the Báránlí Tágh, Kír Shehr, Mújúr, and Hájí Bektásh; the hills above which were all distinctly recognisable. Beyond the village of Demir-lù Kóí, and about 7 miles from Sipáhiler, we turned in a south-westerly direction to cross the Kójah Tágh. To our right, or N.W., was a bold rocky granite group, named the Šarú-bulák Tágh, the offsets of which stretched down to the Kizil Irmák, which river separates them from the Báránlí Tágh, itself advancing in a rather remarkable bold and isolated summit, over the Kizil Irmák, which has a very tortuous course from hence to Cheshní Kóprí. The pass over the Kójah Tágh is commanded, although at some distance, by a hill-fort on a high sienitic cone, called Toklú Tal'eh. Soon after descending from this range of hills, the plutonic rocks are succeeded by indurated limestone, in curved and contorted strata; these by grey and brown sandstone, composed of granitic sand and pebbles: and these again by saliferous red sandstone, which alternate with gypsum, and form low hills along the eastern shore of the Great Salt Lake. Passing the village of Turn-ábád, we obtained a meridian obser-

vation in N. lat.  $38^{\circ} 56'$ ; and after a short journey (much delayed, however, by one of our baggage horses failing), over a hilly district, we came to the pass of Kázi úyúk, in sandstones and gypsum, and which is defended at its entrance from the west by the castle of Kóch Hışár.

The view of the Great Salt Lake from the entrance of the pass is very beautiful, but it wants wood. Narrow at the north, where it is backed by low hills, it subsequently expands almost beyond the reach of the eye; is next lost behind the hills of Injeh Búrnú, a small cape to the S. W., and then re-appears to the south as a wide and distant expanse of water, backed by lofty summits, which are, however, in reality at a great distance beyond the extremity of the lake.

18th.—In the sheltered and sunny exposure of Kóch Hışár, many flowering plants welcomed us at once to spring. The castle, from whence this place derives its name signifying “Ram Castle,” occupies the top of a hill, which is nearly isolated from the remainder of the range, and commands, according to ancient ideas, the town and the entrance to the pass of Kázi-úyúk. The foundations of the castle are now difficult to trace, and occupy an oblong space, 282 feet in length by 150 feet in width. The loose stones are piled up within this space into so many sheep and goat folds, whence its modern name. The present village of Kaşabah contains 130 houses, but no resident Christians. Here are salt-petre works. A mer. obs. gave its latitude in  $38^{\circ} 55' 50''$  N.; approx. elev. 2856 feet. The information we obtained regarding the value of the salt lake was pretty nearly the same as is given by Mr. W. I. Hamilton.\* A portion is said still to be claimed by Ahmed Beg, son of Chapwán O'ghlú; and Hájí 'Alí Páshá deposes the Mutesellim of Ak-Serái to receive the revenue.

19th.—We bent our steps towards the northern end of the lake, our route lying near its shores, along a level plain, bordered to the right by a long range of low hills, at first of red and brown sandstone, then capped by gypsum, at length entirely supplanted by the latter deposit, which extends to the extreme northern end, where the hills terminate in a plain bounded to the north by the Páshá Tágh. This last chain, noticed in Mr. Hamilton's memoranda, is, as that traveller suggested, composed of red sandstone, supporting cretaceous marl and gypsum. It does not rise more than 800 feet above the lake. The weather being fine, we obtained a good mer. alt. of the sun, which gave, for the most northerly point of the lake,  $39^{\circ} 7' 30''$  N.; bar. 27.142; alt. ther.  $65^{\circ}$ .

Passing by Arghun Kóí, a deserted village, with bad water, we travelled in a westerly direction over hills of cretaceous lime-

\* Geographical Journal, vol. viii. p. 147

stone, covered by limestone breccia, affording a scanty pasture to large herds of camels, and food for flocks of small bustards. We were approaching *Karajah Tágh*, from the southward: a small lake of fresh water was to our right, and a more fertile plain was occupied by several encampments of Kurds, with their flocks; in the midst of which was the large village of *Kulú Kõi*, containing upwards of 100 houses, only lately garrisoned by the cavalry of *Hájí 'Alí Páshá*, who had obtained from the Kurds much stolen property, taken with them on their journey northwards towards *Háimáneh*, on leaving the vicinity of *Kóniyah*. We had travelled 12 hours from *Kóch Hişár*; and *Kulú Kõi* was 9 hours from *Kizil-jah Kal'eh*: the district is called *Koreish Kazálík*.

20th.—From *Kulú Kõi* we were enabled to follow a more southerly direction, and to approach the shores of the Salt Lake, of which it was our chief object to recognise the form and direction as much as possible: 3 miles S. 30° W. from *Kulú Kõi* is a hill or mound with a moat, called *Ba'l-chah-Hişár*. The country around undulates gently; the soil is cretaceous; and having many springs, is covered with grass, in consequence of which the tents of Kurds are to be seen in every direction. Out of this district rises a nearly isolated hill of a long form, about 800 feet above the level of the lake, and formed of basanite, supporting limestone. It is called *T'avshán Tághí* (Hare-Mount). Beyond this is a small lake, which, by a mer. alt. of the sun, taken on its northern limits, is in 38°48'45" N. It is called *Kópek Göl* (Dog-Lake). The soil now became covered with *mesembryanthemum* and *artemisia*. We passed another salt-marsh, nearly dried up, and reached *In-Aví*, a large village, on the side of a valley containing a stream of fresh water flowing into the lake, the western limits of which we had been skirting all day.

21st.—From *In-Aví* our route lay in an easterly direction along the valley of the rivulet; marshy, with abundance of plover and water-birds, amid which were flocks of herons. At a distance of about 6 miles, having left the valley and turned over a plain of gypsum, in part cultivated, we came to a lake called *Murád Şóhó Gölí*,\* about 8 miles in length by 4 in width. The shores of this lake, at its northern end, unlike the Great Salt Lake, were steep, the waters having exposed beds of gypsum beneath the superincumbent lacustrine deposits. To the west of this lake were some remarkable hills of volcanic rock, which had constituted useful points for bearings from *Kóch Hişár*, and all along the northern and western sides of the lake. The first of these was called *Bóz Tágh* (Ice-Mount), a more or less rounded hill,

\* This is evidently a misnomer. Perhaps it should be *Morád Şú Gölú* (*Morád-River Lake*).—F. S.

immediately south of In-Aví, composed of basanite covering indurated limestone: the second was an isolated mass of basanite, of remarkable appearance, as it rises out of a level plain of lacustrine deposits. It is called Kará Tepeh (Black-Hill); and there are said to be ruins upon it. The two others similarly circumstanced: one of them is a double hill; the other a low conical volcanic mound.

Continuing along the banks of the Murád Şóhó Gölí, where the plains were very flowery, and where we obtained two species of jerboa, besides a beautiful phalaropus, we came to a river flowing north into the great Salt Lake. This river had its origin in an extensive adjacent marsh to the south, part of the waters of which flow into the Murád Şóhó Göl, and part to the Kóch Hışár lake. At this point is a very antique aqueduct, the masonry of which is completely hid by a thick incrustation of travertino, deposited, as on the aqueduct of Daphne, near Antioch, by the waters trickling from the artificial canal. This duct, which crossed the river just noticed, is called from that circumstance Kayá Bógház (Cliff-Passage).

Nine miles from hence, continuing in a S. S. E. direction, along an almost perfect level, we passed Túsun U'yúk (Peace-Mound), an artificial mound, that once supported a large edifice; the ruins of a former considerable town are almost circularly disposed around this central mound. These ruins are now, with the exception of a few fragments of columns, level with the ground; so we discovered nothing of interest, nor any inscriptions: by position, however, the site may, with every probability, be connected with Congusta or Congustus of the tables: 4 or 5 miles from this, travelling over a marsh, which was in part crossed by a stone causeway, we arrived at the Kasabah of Iskíl, built upon the same great level ground; but as the lake contains no coralliferous or molluscos animals, it would be difficult to say positively, if it were not for the nature of the soil and the configuration of the land, that this great plain south of the lake has been formed by the gradual diminution of the waters of the latter.

Iskíl contains about 400 houses of Mohammedans. The houses are much scattered, the streets consequently wide; there is no daily market, and a general appearance of neglect, as if the town belonged to the shepherds of the large flocks which pasture over the lacustrine plain, who have no villages to seek refuge in, but now and then distant enclosures, like cárvanseráis, for the cattle.

We made but a short journey over the same plain to Sultán Khán. About 4 miles from Iskíl we found some interesting ruins (U'yúk Bowát), consisting of a mound 60 feet high, for the

most part artificial, numerous Byzantine remnants in a very broken condition, and some antique grottoes in cretaceous marl, here covered by limestone conglomerates. A modern mesjid, built chiefly of the hewn stone fragments of former edifices, had succeeded to older ruins, but was itself now also a ruin. Close by the town, which may probably be the Perta or Petra of the Itineraries (found also in Ptolemy), there flowed a fine stream of water, which lost itself in marshes immediately beyond it. These marshes form in the line we were now taking, the south-westerly limit of the lake; but they are so far dried up in autumn as to allow of a cross road from Iskîl to Aḡ-Serâi.

Sultân Khân (the Sultan's khân), is about 10 miles from Iskîl; and by the sun's mer. in  $38^{\circ} 15' N.$  It is so named from a khân or cáravanserâi which adorns this otherwise poverty-stricken village. This khân is divided into two parts, the more easterly is not very lofty but wide, and ornamented by a gateway of rich Saracenic workmanship. This portion is 70 yards long by 64 in width; the westerly part is in a better state of repair, and is very lofty. It is 61 yards long, by 42 in width. I annex a translation of its Arabic inscription by Mr. Rassâm:—

“The exalted Sultân 'Aláu-d-dín, great king of kings, master of the necks of nations, lord of the kings of Arabia and Persia, sultân of the territories of God, guardian of the servants of God; 'Aláu-dunyâ wa-d-dín, Abú-l Fat-h, commander of the faithful, ordered the building of this blessed khân, in the month of Rejeb, in the year 662” (A.D. 1264).\*

23rd.—In pursuing our road from Sultân Khân to Aḡ-Serâi, in an E.N.E. direction, we had at starting to go round the sources of a rivulet originating from six different springs, and thence continued our progress over a marshy land. All that part of the plain which extends between the lake and the gradual rise of land towards the foot of the Ḥasan Tâgh, is lower than the more continuous and extensive portion of the same plain, lying between the lake and the Ḳarâjah Tâgh. The plain we were now traversing is diversified by two ruined khâns, a long causeway of stone, and numerous wells approached by paved roads upon an inclined

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\* Not the Khalif, but one of the Seljukian Sultâns of Ḳóniyah. The princes of that dynasty adopted many of the titles here given, as may be seen on their coins in Adler (*Museum Cufico-Borgianum*, vol. ii. p. 72) and Marsden (*Numismatica Orientalia*); and they probably assumed the title of “Commander of the Faithful” (Amir-i-Múminín) after the extinction of the chalífate, on the murder of Mosta'sim bi-Uah, by order of Hulákú, A.H. 656 (A.D. 1258): so that according to the date here given, could we trust the historian Ahmed el Dimeshkí, quoted by Adler (p. 74), the prince here named was eldest son and successor of Ghayyáthu-d-dín, the tenth sultan of Ḳóniyah, who died A. H. 654; but other historians give no such successor to that sultân; and according to Adler, El Dimeshkí's statement is disproved by coins still extant: few parts of Asiatic history are, indeed, more in want of elucidation than the chronology of the Seljukian Sultâns of Rûm.—F. S.

plane. At  $3\frac{1}{2}$  miles from Ak-Serái we crossed the river of Ulur Irmák by a stone bridge: it flows into the Bayáz Şú or river of Ak-Serái, a few miles below.

Before we leave the region of the Salt Lake and enter upon the rocky districts of Garsauritis, it may be allowable to make one or two brief observations. The Palus Tattæus of the ancients is called at the present day, by those resident in the neighbourhood, Túz Chólí (the Salt-Desert), as it is almost entirely dry in summer; but it also sometimes called Túz Gólí (the Salt Lake), Ají Gól (Bitter Lake), or Kóch Hişár Gólí (Lake of Kóch Hişár), Túzlah (Saltern, or Salt-Work): Memliḥah and Melláḥah in Arabic, signify the same thing.

The eastern banks of the lake are tenanted by pastoral Turkománs of quiet habits, but the western side is inhabited by Kurds, who are constantly giving trouble to the government by their predatory habits. It was most likely, on this account, that Mr. W. I. Hamilton could not find any one to take him to the lake from Afíyún Kará-Hişár, Ak-Shehr, I'ghún, or even Kóniyah; for fresh water, according to every report, is never wanting to the west of the lake. We met with the same difficulty on approaching the lake from the N.W.; but once on its banks, we were resolute in following the yet unexplored western line, in doing which we approached near to the southern declivities of Karájah Tágh, the northern front of which we had also visited in our excursion through Háimáneh. There was, therefore, no real difficulty in completing the north and south lines through this part of central Asia Minor, as the distance previously unexplored required only a journey of 4 hours.

The lake which, as before mentioned, is almost dried up in summer, was nearly at its greatest extent at the period of our visit, and consequently well adapted for an exploratory reconnaissance. To the N., N.E., and N.W., where it receives no large tributaries, it is entirely dry in summer, and its limits are well defined by the absence of vegetation, and the coating of salt and mud; but in its south-western and southern limits, where it receives several large streams of fresh water, which are marked on the map, the plain being, as has been mentioned, very level, far beyond the limits of the lake, the tributary waters spread themselves out and convert the whole land into extensive marshes; so that, between marsh in winter, and salt desert in summer, it is difficult to find out what may be considered as the southern boundary. But as the line of our route extended to pretty nearly the point where all the southerly rivers, except the Bayáz Şú, spread out into marshes, and that line is again connected with Kóch-Hişár, by the labours of Mr. W. I. Hamilton, as good an idea of the real extent of a lake constantly varying in the details

of its form, may be obtained, as if its exact limits to the south had been astronomically fixed.

A series of barometrical observations gave for the mean height of the lake above the sea, 2500 ft. The elevation of many places around not also much exceeding it: Kóch-Hisâr, 2836 ft.; Kólú-Kóï, 2856; U'zúnler, 2778. In Áví, 2924 ft.; Sultán Khán, 2908.

The lake contains no fish, nor mulluscos or conchiferous animals; its waters and its banks are therefore frequented by few aquatic birds. Although constantly on the look out, we cannot say that we ever saw one bird on its bosom, though the story of birds not being able to dip their wings in the water, is evidently fabulous. The state of its saturation is, however, very great, for salt is collected at almost all seasons from the bottom of the lake, and washed in its water without any sensible loss by the process.

24th.—Ak-Serâi has been fixed by Mr. W. I. Hamilton in 38° 20' N. lat. The weather did not allow of our taking any observations there. The town contains 800 Mohammedan, and 10 Armenian houses. It derives its chief interest from its numerous Saracenic remains, some of which are of great beauty. It was evidently a considerable town, and a place of opulence under the Arabs, probably at the time when so much care was bestowed upon the great road passing by Sultán Khán, no doubt a continuation or branch of that given by Idrísí, as the high road from Baghdád through Malátíyah to Kaïsariyah, thence to Kóniyah. Ak-Serâi is also supposed to be a more ancient site, and has been identified with Archelais, or Archelais Colonia, a colony of the Emperor Claudius, which, in the Antonine Itinerary, is placed at 149 m.p. from Ancyra; and in that to Jerusalem, at 162. The known latitudes of Ancyra and of Ak-Serâi, make the actual distance correspond most nearly with that given by the Jerusalem Itinerary.

The greatest difficulty connected with this question is, that Pliny (lib. vi. c. 3,) places Archelais upon the Halys, in consequence of which, supposing that the river of Ak-Serâi might have once flowed through the lake into the Halys, we particularly examined its northern limits in order to determine that point, and can safely affirm that there does not appear to have been any probability, even if the level of the lake were much higher than at present, of there ever having been a communication between it and the Halys. The insulation of the Bayáz Sû, and the non-existence of "a southern branch of the Halys," are important facts in the geography of Asia Minor.

The next object, which we proposed to ourselves on leaving the great Salt Lake, was to follow in part the great road from Phrygia, through Lycaonia, by the capital of Cappadocia; and it is to be



remarked, that in discussing the route in the Theodosian table from Amorium to Tyana, all commentators have agreed in supposing it made a bend to the south, for had it been straight, it would have passed through Archelais; but, as it is, Rennell brings it 13 miles to the southward of it, and Col. Leake follows a similar line. The position of the ruined towns, which we were led to believe might have been the sites of Congustus and Perta, left us only in doubt as to the continuation of the road to the south of Hasan Tâgh, in the line of the present road from Sultán Khán; but by taking the cross road given by Strabo, from Ephesus to Tomisa, into the account, and considering that the two, which must have crossed each other, probably met also in one or more sites common to both; and those sites, the Garsabora of the Tables, and Garsaura of Strabo, and the Coropassus of the Tables, and Nazianzus of the Anton. Itinerary, are to be sought for in the aggregation of mines and early Christian remains, existing in the secluded valleys and rocky ravines at the north-eastern foot of Hasan Tâgh, where Mr. Hamilton visited Virán-Shehr—we now went in search of these, Gelvedereh, Belistermah, and Sevrí-Hişár.

The hills above Aḳ-Seräi are composed of red and brown sandstone, with gypsum; but in continuing up the course of the Bayáz Şü, these are soon succeeded by volcanic rocks and sand, which give a new feature to the aspect of the country. Level uplands terminate in abrupt cliffs over deep ravines, with shingly and sandy declivities which are generally covered with the ruins of rocks fallen from above.

Some villages, as Demirji Kõi and Selmádár, the houses of which are a mere aggregation of loose stones, are so curiously placed, under such circumstances, on the declivity of hills amid fallen rocks, that at a little distance it is difficult to distinguish the one from the other. After a ride of six hours in a S.E. direction, through a country of this description, we approached Gelvedereh by a narrow valley, the cliffs on each side of which are burrowed by grottoes, often variously ornamented; and the bottom of the valley is full of ruins. The modern village of Gelvedereh is exactly in a similar position, only that the inhabitants appear to have kept recoiling from the more open ravines into the more unapproachable recesses that a number of these offered to their choice. At this point they have built themselves a handsome new church; and the caves and grottoes, which continue without interruption for a distance of from one to two miles on the approach to the village, are here fronted up with stone-work, so that the houses rise in terraces, one above the other, and occupy the head of two separate ravines. The grottoes are similar to those met with in other places, as Yárápasón, Tátlar, &c., but rather more ornamental. We did not perceive any ruins indica-

tive of so great antiquity as those found by Mr. Hamilton at the neighbouring site of Vírán-Shehr, 3 hours from hence, S.W. The first site entered upon in this day's ride is at present called Belistermah.

Leaving Gelvedereh, we ascended, in a storm of wind and rain, the rude rocks of Sevrí Hışar, near the crest of which is a curious conical hill, bearing the ruins of an ancient edifice—whence the name of the mountain. Below this are cliffs of sand and tufa, with a few caves and a small Greek village, bearing the same name as the mountain. From this valley we gained another, more isolated, and surrounded by barren, rocky, volcanic hills, in the midst of which are the ruins of a pretty modern Greek church. Our guide did not know the way over the district we had now entered upon, and we were not long in losing our track, which we did not regain till, after travelling  $2\frac{1}{2}$  hours, we came upon hills which commanded the great plain of Mál ákób.\* We had previously been passing through ravines, and amid hills generally covered with wood, and composed of tufa, conglomerate, and obsidian. It rained incessantly as we travelled over the plain, which is cultivated, and abounds with villages, but is ill supplied with water, being at an elevation of 4138 ft. In the centre is the large village of Mál ákób, another curious Greek colony or congregation; it contains 200 houses of Greeks, and 70 of Mohammedans. The men trade at Constantinople, the women cultivate their gardens. Their dress is peculiar. Water is obtained with labour from deep wells, of which there are several, surrounded by stone enclosures, each of which belongs to a different family. There is one modern church, in part built of the ruins of an older edifice, and dedicated to St. Theodore; another in ruins, dedicated to St. Michael; and a pretty chapel, in the same condition, to "All Souls." There are also fragments of another church, where we copied from an altar-piece, the only distinct and consecutive letters which bore any appearance of antiquity—

Α Χ Α Ι Θ Ε Α Χ Α Τ Ω Β  
Π Α Τ Ρ Ι Α Τ Α Θ Ω

The houses are all built upon the same plan, the frame-work being formed by three or four well-turned semicircular arches, and the interval filled up with rubble and masonry. They are mostly excavated from the mountain to keep off the summer heats. The village is built upon a level plain of volcanic sand, which in summer is drifted about by every breeze, to the great inconvenience of the inhabitants, who also, to protect their cattle and

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\* An Armenian name; Mál-A'kób, for Már-Yákób: St. James—F. S.

fodder, have paved circular spaces in front of their houses, giving to the place a cleanly appearance. The gardens are at the foot of some hills about 2 miles N.E. of the village, where there is also a dome-shaped mountain, called Chevri, upon the summit of which an annual festival is kept at Easter.

Passing over the Chevri hills, we came, after a  $1\frac{1}{4}$  hour's ride N.E., to Kaïşar Kōi, a village with a ruined church, a rather pretty káravánsērāi, and other relics of former times. It has now only five houses belonging to Greeks, and about 20 to Mohammedans. By its name and position, this place might be identified with Dio-Cæsarea. Three miles to the right is a conical hill, bearing the ruins of a church or monastery, called Charink Kilisá.\* About 5 miles from Kaïşar Kōi, passing the ruins of a small Greek village, with remains of a church, a few caves and houses with pavements in front of them, we descended in a southerly direction, by a picturesque pass, into the valley of Sówanlı † Dereh, described by Mr. W. I. Hamilton, as Soandum. The pass we descended by, was hewn out of the solid rock, below which the valley opened most picturesquely before us; and it is, as Mr. Hamilton observes, a truly remarkable place. The cliffs at the head of the valley are not above 60 or 80 ft. high, and the declivities below, about 100 ft.; but both become loftier farther down. The valley follows a rather winding direction; and throughout its whole length, from the top to the base of the hill of Cybistra, are caves or grottoes more or less numerous. Tired with a continued rain and a drenching every day, we stopped at O'rtah Kōi (Mid-ville), a cleanly Greek village near the middle of the valley.

The morning of our arrival at Kará-Ĥişár ‡ was fine, and a meridian altitude of the sun gave for its position  $38^{\circ} 21' 20''$ . Soon after our arrival, Mr. Russell and I started for Zingíbár Castle. It rained all the evening, and also while we were taking the measurements, which occupied no small time in so large and so irregular a building; but we were anxious to compare it with the details of the ancient accounts of Cybistra and Nora.

The castle of Kará-Ĥişár, or of Zingíbár, one of the most remarkable ruins in these districts, stands on the loftiest of two volcanic cones belonging to a hill which forms nearly the most southern point of a low range, extending northwards to Injeh-Sú, and southwards in low hills towards 'Alí Tāgh. These hills are merely detached from the central upland of Garsauritis, and cannot be said, as Rennell supposed (No. 2, pp. 172, 194), to

\* For Chiring Kilisá, *i. e.* Bell-Church.—F. S.

† For Soghán, Onion-Ville.—F. S.

‡ Devehli Kará Ĥişár; *i. e.* Camel Black Castle.—F. S.

connect the Lycæonian hills (Karájah Tágh) with Anti-Taurus ('Alí Tágh), or to be a continuation of the Lycæonian hills eastwards, and of Anti-Taurus westwards.

Cybistra has been identified by Col. Leake and others with Kará Hişár, but by Rennell with a place called Costere.\* It is chiefly remarkable on account of its having been the military station of Cicero, while watching the motions of the Parthian army, which threatened Cilicia and Cappadocia from the side of Syria. Strabo places Cybistra 300 stadia from Cæsarea, this, upon the scale proposed by Colonel Leake,† would amount to about  $34\frac{1}{2}$  British miles. There is some difficulty in ascertaining what distance is meant in the Theodosian Tables: but this would correspond very well. The distance of Kará-Hi ár from Cæsarea by the Injeh Şú (Sadacora), being estimated at 12 hours or 36 British miles.

The castle of Nora or Neroassus, appears on a variety of grounds, to be the same as Cybistra. Plutarch describes it as situated on the confines of Cappadocia and Lycæonia, while Rennell objects that this castle is not on the common boundary of the provinces, because the district of Tyana intervenes, which is not the case, the district of Tyana being altogether to the south of Kara-Hişár. Rennell says it consisted of distinct forts near each other, but Plutarch only mentions the great inconvenience to the garrison, from the narrowness of the space in which they were confined, enclosed as it was with small houses. Diodorus (lib. xviii. c. 41 Ed. Wesseling) describes it also as a single castle, situate on a high rock and very strong. Plutarch gives to it a circuit of not more than 2 furlongs (440 yards) according to the translators, 250 paces. And Diodorus says, only 2 stadia, or 404 British yards, in circumference. The superficial content of the interior castle, reduced to a figure of an equal periphery, is 11 British yards. The plan generally agrees with Plutarch's description, but is so heterogenous, that it is to be regretted that it is lost with the others.

It is to be remarked that this castle commanded the pass by which the great road from Cæsarea led by Soandum, to Iconium, as also that which continued southward to Tyana and Cilicia.

On leaving Garsauritis for the district of Cæsarea, the country is too interesting, and has been too little the object of recent descriptions to be passed without remark. Garsauritis is to be viewed as eminently a rocky country; Morimene has ranges of mountains; Central Cappadocia is similarly situated, as is also Melitene; but Garsauritis is remarkable for its wild and stony

\* Kóstereh or Gístereh.—*Jeh. Numá.* p. 620.

† *Journal*, vol. ix. p. i.

districts, secluded glens and ravines, and often picturesque outline; but it has also fertile plains and still more productive declivities. Wood is generally wanting: there is some on the Sevrî-Hişâr hills, but for fuel, dry dung, charcoal, and the roots of *astragalus tragacanthus* are generally used. Whether grants were made in modern times to the Greeks of this unpromising land, to render it tributary to their industry, whether by apprehension or a morose love of seclusion, they willingly retired to the rocks and caves of this singular country, or whether they have remained around the ancient abodes of their forefathers, the present servile and ignorant race can tell you nothing. Marrying early, the men repair to Constantinople and Smyrna to trade, while to the women is left the care of the house, the flock, and the vineyard: an evil follows from this which once attracted the legislative attention of Lycurgus; the females become masculine and full of violent passions, and when the men return to their homes, they are often very far from finding an echo to the subdued tones and more polished manners which they had learnt to appreciate in the civilised world. The priests who remain at home, might be supposed to have some influence, but they are often old and unserviceable and even sometimes disrespected.

Garsaura, or Garsauritis, it is well known, formed one of the divisions of Cappadocia, and was bounded to the south by Tyanitis and Lycaonia; to the west by Phrygia (Pliny, lib. vi. c. 3), and the district of Tattapalus, or the Tattæan marsh (Strabo, p. 568) which lay along the common boundary of Phrygia, Galatia, and Cappadocia (Rennell, vol. ii. p. 157); to the north by the Halys and Morimene, and to the east by the district of Argæus and the Cappadocian Cilicia. It thus constitutes a separate district, equally remarkable with respect to its natural features and its remains of art, its configuration, its structure, its ruins, its caves, and its population.

The north eastern part of Garsauritis is particularly characterised by its conical volcanic mountains, its streams of lava, and basanitic cliffs, but above all, by its naked volcanic tufa and tephritic rent into deep and narrow glens, studded with cones and pinnacles, also the effect of disintegration, and often presenting an infinite variety of singular forms; and lastly, cliffs and precipices excavated almost wherever such present themselves, with vast multitudes of grottoes that have served, or serve still, for dwellings, churches, chapels, monasteries, or tombs.

The N.W. portion of Garsauritis derives its features, which are less singular and of a more inhospitable character, from a long range of sienitic mountains; rocky and picturesque in the Tâsh Teller; undulating in the Şârî Karamân; stony and wild, again,

at Chámúrlí; bold but rocky, with castellated remains in the Kójah Tágh; abrupt and truncated cones at Tóklú Kal'eh; grouped and mountainous in the Sári-búlák Tágh, and there the sienites meet the mountains of Morimene (Báranlí Tágh) and enclose the Kızıl Irmák, or Halys, in deep and narrow valleys and ravines.

Central Garsauritis is characterised by the Aká-juḵ mountain, a tame saddle back, not very lofty, but visible from all Morimene. Connected with it are many offsets, in the deep valleys of which are the lakes called Delvehlí, Tursupú, and others. This district is tenanted by the Akájuḵ Kurds, who possess a tolerable reputation for good behaviour.

The Tattæa or Tatta Palus, is acknowledged to have been in ancient Phrygia (Strabo, p. 568), extending through the south-eastern part to Taurus, that is the plain of Perta, extending to Karajah and Hasan Tágh, was considered as bounding, as well as its northern part, on Galatia, and formed part of the kingdom made up by Antony for Amyntas. The S.W. quarter of Garsauritis, as thus limited, is pre-eminently distinguished from the other quarters by the lofty summit of Hasan Tágh, rising upwards of 8000 feet above the level of the sea. This mountain has a nearly conical form, and is said to preserve patches of snow throughout the year. Its north-western base is bounded by the plain of the lake; to the S.W. a low undulating country connects it with the Karajah Tágh, while to the E. it is prolonged by one or two cones, and then a lofty chain of hills, which shut up Garsauritis to the S., but do not extend as far as that part of Taurus called 'Alí Tágh, and from which they are separated by the uneven territory of Tyanitis.

Hasan Tágh is in every direction a picturesque and striking mountain, but there is still more interest connected with the curious glens and rocky ravines at its base, than with its own acclivities or heights. Of volcanic origin, excepting the sandstone and gypsum deposits of Ak-Serái, almost immediately succeeded by trachytes to the east, it has spread over the whole country a considerable, although local formation of trachyte, claystone, and clinkstone,\* which generally reposes upon tufa or tephrrine.

These rocks influence the configuration of the whole of the south-western quarter; the compact uniform products of effusion, are spread as it were, in vast beds over the rocks of aggregation, giving rise to plains or slightly undulating lands, with sometimes stair-like terraces; but where there is water, as along the courses of rivers, the detrital rocks of a friable nature are carried away,

\* Although I use trachyte, claystone, &c., I am far from admitting the correctness of these terms.

while the more compact rocks are tumbled down, leaving vertical cliffs above and acclivities of sand below, with scattered masses of rock, amid which the habitations of men are so intermingled, that it is sometime before the traveller can distinguish them from the ruins of the cliff. The face of the rock above, as well as the declivities of sand below, when not covered with fragments, are in many places studded with numerous grottoes.

On approaching the foot of Hasan Tâgh and the head of the waters, the tributary streams are more numerous, and the ravines in consequence more frequent, sometimes as many as three or four are to be observed meeting at short distances, and all with excavated cliffs and innumerable nest-like mansions of the living and the dead.

But at other times lavas (tephrines) mingle themselves with domites, leucostines, basanites, and basanitic conglomerates, forming ranges of hills as in Sevrî-Ĥişâr: and then again, the rude domites advance upon the lower territory in naked rocky masses like a true granitic country, surrounding little isolated basins amid which are again found the ruins of habitations, and of stone churches, belonging to the same race of men.

The modern Greeks are not, however, confined to these wild spots, so difficult of access and so rarely inviting to the eye. The small town of Mál A'ķób has been described as situated in the midst of a fertile plain—Kaişar Kõi or Dio-Cæsarea is again in a rocky district. The south-eastern quarter of Garsauritis partakes indeed of both features, grassy uplands with tepehs or solitary hills, sometimes with old churches on their summits, as at Charink-Kilisá, and cultivated plains, with little water or wood, out of which also rise bold, rounded, and naked hills of lucostine, like the phonolitic domes in Scotland and France, and the seat of superstition, as in the Chevri and other hills; and lastly, on the confines of the district, we find at Şówanlı Dereh and places adjacent to it, the same deep cut valleys with the same repetition of cliff and cave scenery as awaken the traveller's interest and fix his attention in the northern and southern portions of this very remarkable district.

28th.—We started along the plain of Kará-Ĥişâr,\* where vegetation and scenery were both monotonous. The rivulet of Kará-Ĥişâr flows onwards in winter, as it did at the present moment, to the most southerly of the lakes that occupy the plain of Kará-Ĥişâr, which become mere marshes in summer. At that time the quantity of water brought down from the Şówanlı Dereh by Kará-Ĥişâr is so small as scarcely to suffice for the

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\* Develhí Kará Ĥişâr.—J. N., p. 620.

purposes of irrigation. The plain of Karâ-Hişâr, according to our barometers, has an elevation of 3420 feet, and does not send out a stream in any direction. A range of hills stretched along our left, in a direction N.N.E. At their foot were caves with ruins of a Christian village. On the plain, 3 hours from Karâ-Hişâr, there is a ruinous khân. The foot of Arjîsh Tâgh had hitherto been occupied by hills of volcanic sand, tufa, and conglomerate, which terminated in a well-defined line on the plain; but immediately beyond what is now the northern lake, a considerable stream of basanitic lava had flowed between hills of sand, &c., expanding towards the base of the mountain, and advancing upon the plain in a northerly direction, extending to the limits of the Great Sázlık or Marsh, beyond Injeh Şú. The low cliffs formed by these scoriaceous and lava-basanites are partitioned out by the industrious Christians for the cultivation of the yellow berry (*Rhamnus infectorius*).

Injeh Şú (Slender water) is a small town, remarkably situated in a ravine of volcanic conglomerate, which is traversed by the rivulet that gives its name to the town; Injeh Şú (Narrow River), not Injú Şú (Pearl River). The town is shut up at its N.E. extremity by a handsome khân, the walls of which extend from one side of the ravine to the other. The ravine expands at its upper part, and opens into another, having a north-easterly direction. Both the declivities and base are occupied by dwellings: the Mohammedans and Greeks having each about 750 houses. There are also many grottoes. The Christians have two churches, one of which makes a fair appearance on the hill side. The houses are also for the most part good and cleanly. Injeh Şú is governed by a Mutesellim, sent from Constantinople; the produce of the taxes of the town being devoted to the maintenance of the Jâmi', called Maĥmúdíyah, in the Mohammeden capital. It was indebted also to the Sultân, when Karâ Mustafâ was Vezir, for its Khân and Jâmi'.

29th—Our route to Kaïsariyah lay to the E.N.E., along the borders of the Great Sázlık or Marsh, alternately at the foot of black rocks and cliffs of lava, and occasionally by stony unpleasant paths over the same rude material. Mr. W. I. Hamilton has remarked upon the absence of rivulets in the declivities of Arjîsh, the melted snow being almost immediately absorbed by the porous volcanic rocks, but on this side it reappears in abundant springs, more or less circularly disposed in little rock-enclosed valleys, where they unite, not to form rivulets, but to expand over the great marsh previously alluded to. Beyond these basanitic rocks with frequent springs, we came to a more open valley, everywhere covered with gardens, and making



a short ascent over the side of U'lán-lí mountain, we passed by what was apparently a great subsidence in the rock, called Kurk Kurk; and thence descended upon the plain of Kaïşariyah, passing, before we reached the town, a long peninsulated hill, called Besh Tepeh (Five Hills), at the extremity of which is a ruined castellated enclosure, and upon which is said to have been built a portion of the ancient town of Cæsarea.

*May 1st—8th.*—Kaïşariyah is a town of great antiquity. As Mazaca, it was the capital of Cappadocia, at the time that the Greeks knew it only from the reports of casual travellers. In the time of the early Roman emperors it took the name of Cæsarea, but with the addition of its original name. Being situated at the foot of Mount Argæus, it has also been denominated from that mountain. Its modern name is a mere corruption of the ancient one; at present it is vulgarly abridged into Kaïsar. It appears once to have been a large and populous city. After the captivity of the unfortunate Valerian (immortalised on the rocks of Shápúr), Demosthenes, a Roman, not so much as Gibbon, remarks, by the commission of the emperor, as in the voluntary defence of his country, resisted in Cæsarea the progress of the Persian arms. The town was subjected to a nearly general massacre, and is said at that time to have contained 400,000 inhabitants. The modern city, which is for the most part in a very ruinous condition, contains 12,176 Mohammedans, 5237 Armenians, and 1109 Greeks. Total, 18,522 persons. This was the Ayán's report to Mr. Rassám.

During our stay at Kaïşariyah the weather presented some very fine intervals, which enabled us to obtain a series of Lunar Observations, which gives its longitude  $35^{\circ} 45'$  E. Its latitude by a number of mer. alt. of sun and several stars is  $38^{\circ} 41' 40''$ . We also laid down a plan of the city and of its ruins, which chiefly belong to the Mohammedan era.

The attention of the expedition had been particularly called to the investigation of the hydrography of the immediate neighbourhood of Kaïşariyah: whatever may still be the difficulties that will hang over the statements of the ancients upon this subject, nothing can be more certain than that no rivulet or river flows from that neighbourhood to that called by the Turks Tokhmah Sú, the sources of which, to put the question beyond all doubt, we investigated in a subsequent part of our travels.

There is a rivulet which flows from the northern foot of Arjish, and which, sweeping round 'Alí Tágh, passes by the populous village of Tágh Kazi, and is thence, at most seasons of the year, lost in irrigation; at others it is a tributary to the Şárimsağ. There is also another small tributary to the same river from

Manju-lí. Mr. W. I. Hamilton ascertained, in going round Arjish on the east side, that there are no traces of any stream or waters except such as flow N.W. or S.W. The Şárimsák river, which we traced nearly to its sources, flows from the village of the same name, in a westerly direction across the great plain of Kaışarıyah, where, at a distance of 2956 yards from the city, it is 8 yards in width by 2 feet in depth. It loses itself in the Sázlık or Great Marsh, where it is said to be joined by the Kará Şú, and to flow by Bógház Kóprı to the Kızıl Irmák.\* This united stream is what Messrs. Hamilton, Texier and Callier identify with the Melas of Strabo (xii. p. 538), after the submersion of the lands of the Galatians.

The noble mountain of Arjish, the ancient Argæus, vulgarly called Ardish or Arjeh, is now clearly proved to be the loftiest peak in Asia Minor. Almost perpetually involved in clouds, during our stay at Kaışarıyah, we had only an occasional glance of its extreme summit: and the season of the year in which the snow line descends to within a few hundred feet of the plain, put all attempts at an ascent out of the question, even if, after Mr. Hamilton's labours, it had been deemed advisable to incur the delay and expense entailed by such an undertaking. The structure of this fine mountain, which, like Hasan Tágh, is principally of volcanic origin, and belongs to a comparatively modern epoch of activity, will be best described by the before-mentioned traveller; but the whole, in a general point of view, presents an interesting accumulation of conical, rounded, and saddle-backed hills, chiefly composed of grey friable lavas, with a basaltic base. The manner in which these various formations are dispersed about the declivities, is rather remarkable, and always very distinct.

The summit of Arjish bears from the Armenian church in Kaışarıyah S.  $17^{\circ} 30' W.$ ; the variation of the compass at the same place was  $10^{\circ} 30'$  westerly, hence the true bearing of the summit is S.  $7^{\circ} W.$  Its summit appears to be about 10 miles from its average base, considering it for the moment to be isolated on every side, which it is not to the S.E. This would give a mean area for the whole mountain of 300 miles, and a circumference of 60. Its elevation, as determined by Mr. Hamilton, is 12,809 feet. The report that both the Euxine and the Mediterranean may be desried from its summit, given by Strabo (p. 538), must be received with caution, since its distance from the Euxine is 170 British miles, and from the Mediterranean 110 geographical

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\* Baron Wincke, a Prussian staff officer, who accompanied the unfortunate expedition of Zaid Moĥammed Páshá, also verified this fact. He further states the marsh to be divided into two distinct parts to the N.

miles, with ridges of high mountains between both. There is also a tradition that the Romans had a castle on its summit, where Tiberius Cæsar used to sit, which is not deserving of attention, except as probably connected with the adjacent summits of 'Alí Tâgh or U'lânî.

The Armenians have preserved a written chronicle of the earthquake that ravaged Kaışarıyah in August, 1835; but it contains little that is of any interest to the philosophy of these destructive phenomena. It appears that it commenced two hours before sunrise on the morning of Thursday, August 1st, and was accompanied by a loud noise, the shocks being repeated for as much as ten hours from that time. Many minarets and other lofty buildings were thrown down. The record says that there perished as many as 665 persons. The houses thrown down are mentioned rather hyperbolically as beyond enumeration. Several of the neighbouring villages that were built in ravines of crumbling rock, suffered severely. At Tâgh Kâzî 17 houses were destroyed by the fall of a rock. At Manjusun, 3 hours to the west, the loss of houses was also great. A catastrophe of a similar kind which occurred at Beli-Yâzî has been noticed by Mr. Hamilton. I could obtain no satisfactory account of any well-defined swallowing up or subsidences.

There was some discrepancy in the barometrical results obtained by ourselves and by Mr. Hamilton. Ours gave for the elevation of Kaışarıyah above the sea only 3236 feet, Mr. H. placing it at 4200 feet. The boiling point of Robertson's thermometer was 25·8; our barometer stood at 26·314; the thermometer at 59. Cloudy weather.

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M. Ainsworth's route coloured Red  
M. Brant's route coloured Blue  
M. Suter's route coloured Green  
Lord Pollington's route coloured Orange







ASIA MINOR & ARMENIA,  
to illustrate routes of  
MR AINSWORTH, MR BRANT,  
MR SUTER, &  
LORD POLLINGTON.  
1840.

The eastern portion of the Map, from observations by  
M.A.G. Glascott, R.N.

- Red
- Blue
- Green
- Orange









M<sup>r</sup> Ainsworth's route coloured Red  
M<sup>r</sup> Brant's D<sup>o</sup> Blue  
M<sup>r</sup> Suter's D<sup>o</sup> Green  
Lord Pollington's D<sup>o</sup> Orange

Longitude East from Greenwich



# ASIA MINOR & ARMENIA,

to illustrate routes of  
 M<sup>r</sup> AINSWORTH, M<sup>r</sup> BRANT,  
 M<sup>r</sup> SUTER, &  
 LORD POLLINGTON.  
 1840.

The eastern portion of the Map, from observations by  
 M<sup>r</sup> A.G. Glascott. R.N.





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Notes Taken on a Journey from Constantinople to Mósul, in 1839-40

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XIV.—*Notes taken on a Journey from Constantinople to Mōsul, in 1839-40.* By WILLIAM AINSWORTH, Esq., in charge of an Expedition to Kurdistan.

[As Mr. Ainsworth's route, as far Kóniyah (Iconium), is that usually followed, those portions only of his Journal which add to our previous knowledge of that country have been here given.—ED.]

MESSRS. AINSWORTH and Rassám, now British vice-consul at Mōsul, embarked in a káik (or wherry) on the 2nd of November, 1839, and at the end of 5 hours reached Hersek, on the southern side of the Gulf of Iznikmíd (Nicomedia). The neck of alluvial mud and sand on which this village stands at the mouth of the Dervend-şú (Barrier-Water)\* extends upwards of two miles into the sea. The neighbouring lagoons render the place so unhealthy that none but the attendants at the post-house reside there. It is not far from the site of Pronectus, from which there was anciently a ferry to Libyssa, now probably Harakah, as the neighbouring ruins show. Gekbuzeh (pronounced Geïbizéh), anciently Dacibyza, and Máldisem to the west of it, were supposed by Major Rennell and Colonel Leake to occupy the site of Libyssa. They then travelled along the outskirts of Gók-tágh (Heaven-mountain), the western extremity of Olympus, consisting of sandstone, with a varying dip N. or S. at a moderately inclined angle. The village at the pass, called Dervend (Derbend, *i. e.* Barrier), is chiefly inhabited by Greeks. Early on the third day they came in sight of the beautiful Lake of Izník (Nicaea). The hills by which they descended to its shores are lime and sandstone resting on schist and quartz rock. Izník, of which the double walls are in great part still subsisting, has not now more than 150 houses, one-fifth of which only are inhabited by Greeks. These crumbling walls, and their intersecting towers, oblong, of white marble, and semicircular, of red bricks, covered in most places with luxuriantly climbing shrubs, are extremely picturesque. Two fine gateways and the remains of a Christian church are particularly deserving of notice; but the latter does not appear older than the time of the Lower Empire.

On the 5th of November, after travelling through a valley at the eastern extremity of the lake, and passing a large artificial dam or mound near Karádún, about 5 miles from Izník, they began to ascend hills of the same rock as those last mentioned, and after crossing a ridge, descended through a rocky glen and narrow pass into the valley of the Lefkeh Şú (River of Leuce,†

\* Named from Kiz-derbend (Virgin's-barrier) to the S.E.

† Pronounced Lefki by the modern Greeks. Mr. Ainsworth says it is here called Sakáriyeh, and supposes it to be the main stream of that river. It receives the waters of Yeni Shehr and Aïn-göl in this valley, and beyond it, those of Vazir khán and Bileh-jik.

the ancient Gallus), which they crossed by a bridge, and soon reached that town, which has only 400 houses. The low land in this valley, which is peculiarly picturesque, consists of red and brown tertiary limestone; and the hilly tract to the east of Lefkeh is a brown sandstone, with red and white marl dipping north, succeeded by a tract of trachyte; after which comes a range of precipitous limestone rocks, through a deep rent in which the river Sakáriyeh probably forces its way. The town of Khusrev Páshá, or Vezír Khán, at the summit of this beautiful pass, has about 100 Greek and 50 or 60 Mohammedan families; and furnishes annually 4000 ókahs of silk. The valley of the Lefkeh river soon becomes very narrow and less fertile; and the high-road, crossing the stream by a bridge, leads over stony hills of trachyte to a level and slightly cultivated upland. Bilehjik, on a limestone rock, is now visible 3 miles distant on the right. The descent commences at the distance of  $2\frac{1}{2}$  hours (about 7 miles), and passes through beds of conglomerate sandstone and marl, with some broken trachyte. The hills to the north, through which the Sakáriyeh and its tributaries pass, appear to be limestone which has suffered from volcanic action. To the south a lower range of trachyte is succeeded by limestone, and well-wooded hills; at the foot of which is Sógut,\* a small town, named from the many willows in its neighbourhood, and containing about 400 houses, pretty equally divided between Christians and Muselmáns.

*Nov. 7th.*—A journey over hill and dale, with much wood, for 3 hours, brought them to a more open tract of micacious schist, lightly cultivated. In one place some fragments of columns and architecture seemed to mark an ancient site. Beyond this, in crossing an extensive plain, they had a distant view of Eski-shehr, about 7 or 8 miles S.  $54^{\circ}$  E.

That town, now almost abandoned, consists of two portions, one at the foot of the hills, the other between two rivulets in the plain, where the market is held. There is a khán, and a manufactory of pipe-heads from the magnesian and silicious substances called by the Germans “meerschaum” (“sea-foam or spray,” from its white colour). The pits whence it is obtained are said to be 8 hours distant (24 miles), on the road to Serví Hışár. A specimen, procured by Mr. Ainsworth at this place, fresh from the mines, prove it to be a hydrated silicate of magnesia. It appears to be found in a bed of volcanic rock, similar to that of Garsaura, which crowns the hills S. of Eski-shehr, and rests upon strata of talk-schist and serpentine. This seems to be only a local variety. It is a porous, friable stone, almost entirely composed of small-

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\* Pronounced Sógyut.—Ed.



grained vitreous or transparent felspar, with here and there crystals of augite or pyroxene. In the most common varieties which are of a light grey colour, when carefully examined with a glass, each separate microscopic grain is observed to be in a state of decomposition on its surface; and, like other decomposing felspars, is passing into a variety of percellanite kao-lin, or pe-tun-tse, as it is indifferently called. In certain varieties of this rock the process of decomposition has proceeded further, and the result is an uniform pulverulent mass, imbibing water with great avidity. The cerous lustre and more close texture of other varieties of the same product, attest the existence of larger proportions of magnesia in their composition, and those varieties alone are sought for on account of their utility. They exist, however, chiefly in combination with more impure and coarser varieties; and hence, at the magazines at Eskí-shehr, there is much cutting and reducing before the choice pieces are polished previous to exportation.

In the hills of Eskí-shehr the meerschäum is associated with breccia and compact brown silicious rocks, which latter is most common in the neighbourhood of basaltic formations, such as are frequent between Eskí-shehr and Seyyid el Ghází. At this latter place are cliffs formed of thin alternate beds of the same white and grey rock, sometimes so friable as to be almost pulverulent, at others more uniform, and at others containing breccia; and lying upon these there are various kinds of silex.

Eskí-shehr, by observations made with the boiling-point thermometer, corrected by Colonel Sykes's Tables, is at an elevation approximatively of 2308 feet above the sea.

9th.—Their road from Eskí-shehr lay over uplands, terminating here and there in moderately high terraces of rock, or stretching out into wide unvaried plains. The hills are covered with low shrubs; the low land, however, has but a scanty vegetation. The sheep of this tract, which is open and exposed, and has an average height of 3000 feet, have clean and light fleeces; and the goats have (as throughout Western Asia) an underdown, although their upper fleece is not so silky as that of the true Angora or Kurdistán breed.

The goats of the central upland of Strabo's Phrygia Epictetos are further remarkable for their short horns, and their various colours, being generally reddish-brown and black, but sometimes black and white, or reddish-brown and white.

After passing round a wooded hill of trap-rock, they crossed a fertile valley, watered by a stream 30 feet wide by 1 foot in depth, and then entered into the town of Seyyid el Ghází, situated in a narrow ravine at the foot of the cliffs which bound the valley to the east. This town contains about 600 houses of Muselmáns, and is much venerated by Mohammedans on account of the saint

who is buried in its sepulchral chapel. A Tekiyeh (convent) and other religious buildings, not quite so ruinous as usual, are picturesquely perched upon the cliffs above the town.

10th.—The ravine Seyyid el Ghází enters the hills in a direction of S. 8° E., and passes, as previously noticed, through silicious rock and lava, which on the upland are soon succeeded by a distinct dark-coloured trap-rock, with only a few dwarf oaks and junipers. At a distance of about 6 miles from the same place limestone succeeds to the silici-calcareous rocks, from which spring trees of oak and arbor vitæ (*Thuja*). A small, fertile valley in the midst of this wooded district, contains a village of about 100 houses, called Bârdâk Chilî Kôi,\* where remains of ancient buildings, the columns apparently of the age of the Lower Empire, seem to show the vicinity of some ancient town.

A forest of tall pines then crowned the wooded eminences, and led, after about 2 hours, to a large cultivated plain. A wooded hill and more open country brought the travellers, amidst a pouring rain, to the wretched village of Khusrev† Pâshâ; in which, as in Nizib, a large and ancient Christian church has been converted into a mosque.

11th.—Forests similar to those on the other side of Khusrev Pâshâ, growing on soil, the substratum of which, is a blue and white granular limestone, alternating with clay-schist, continue to the S. of that place. A few organic remains and impressions are found in the softer beds of the sedimentary deposits, which here begin gradually to rise into hills from 900 to 1000 feet above the neighbouring valleys. This is an outskirt of Emîr Tâgh which is tame in its outline, but from its abundant wood and verdure, always pleasing and occasionally very beautiful.

About 16 miles beyond Khusrev Pâshâ lavas and tuffa, with beds of obsidian and coloured silex, are first seen. As the decomposition of these substances takes place at different rates, they soon form terraces, beset with caverns, natural or artificial, which have been used as chapels, hermitages, or habitations.

The first have ornamented portals, and were evidently sepulchres: near the ruins of an ancient village further on, there are many large caves, which served as habitations or oratories; and near the commencement of the district of Bayád,‡ a rocky hill by a spring, is full of them.

That district is a high upland in Emîr Tâgh, rather exposed, but having some good arable land. Beyond it, low hills of schist and quartz, succeeded by limestone, form the southern de-

\* Pitcher-freckle-village; or, if Chilî, Partridge-village.—Ed.

† Khusrev, pronounced Khusref, is the Khosrau (Chosroes) of the Persians.—Ed.

‡ Biyât in the *Itinéraire de Constantinople à la Mecque*, p. 91.—Ed.

clivity of Emír Tāgh, which descends to Búlávádín by a long and very gentle slope.

This small town contains 3000 inhabitants, exclusively Muselmáns. Its houses are only of one story; and there are five mosques, some kháns, and a market-place. A solitary minaret at some distance from the town marks, no doubt, the site of a ruined mosque.

The great plain in which Búlávádín stands is bounded by Sultán Tāgh on the S., and by Emír Tāgh on the N., and has several lakes. Its elevation, as ascertained by the boiling-point thermometer, is 2900 feet above the sea, and it lies between ridges dividing the waters flowing towards the Black Sea from those which flow towards the Mediterranean. In that peculiarity, it resembles the plains of Kóch-Hişár, I'ghún Sû, Kóniyah, and Nigdeh, in each of which there are similar lakes.

12th.—About  $2\frac{1}{2}$  miles S. of Búlávádín the plain becomes marshy, and is at times difficultly passable. There is a central water-course, nearly stagnant, which at some seasons flows slowly in an easterly and north-easterly direction to the permanent lake, which occupies the lower part of the plain, and which varies much in size at different seasons. The road is carried across this marsh on a raised causeway for more than 5 miles. In the marsh there is an abundance of birds, such as starlings, plovers, snipes, quails, ducks, geese and bustards, vultures, blue kites, merlin-hawks and buzzards.

At about 9 miles from Búlávádín is the foot of Sultán Tāgh, where the ground begins to rise; and the villages of Sinák Dereh, and Sinák Yaká, stand at the entrance of two ravines in the hills.

Sultán Tāgh, although not very lofty, is remarkable for its bold, Alpine character, and massive, rocky outline. Its general elevation appears to be from 1000 to 1500 feet above the level of the plain, and perhaps 4000 feet above the sea. Its culminating point above Aḡ-Shehr was, even at this season, only tipped with snow. From an examination of the pebbles brought down in the bed of its winter-torrents, it appears to consist chiefly of limestone, lying on argillaceous and micaceous schists. This chain is not so extensive as it appears on our maps. The lakes in this tract, generally said to be salt, are, from all we could learn, fresh, and abound in fish; nor is there any substance in the neighbouring soil at all resembling the saliferous sand and sandstone which nearly surround the Lake of Kóch-Hişár.

13th.—From Isháklí, a large village, surrounded by gardens, they proceeded to Aḡ-shehr, about 12 miles distant. The country at the foot of Sultán Tāgh is here well cultivated, and often very pleasing. The cultivation extends for a mile or two in the plain; but beyond that northwards, all is marsh or water.

Ak-shehr is situated at the entrance of a large valley watered by a small river. Its houses rise above one another in terraces, or are prettily scattered amid groves and gardens. There are fifty Armenian families. From Ak-shehr, an extensive, grassy plain stretching far away in an easterly direction, is bounded by a few ranges of low hills.

14th.—At  $3\frac{1}{2}$  miles, nearly S. by E. from Ak-shehr, they passed Karyat, a village on a hill, and entered a plain bare of trees, but yielding a little corn. This plain, occasionally varied by a village, rivulet or some rubly limestone, extends to Arkad Khán of the maps.

Beyond that place, the road leads over low hills of limestone (apparently of the chalk formation) to the valley of I'ghún,\* remarkable for its two lakes and stream running between them; respecting the junction of which Mr. Ainsworth had not an opportunity of satisfying himself. At the entrance of this small town there are some sacred buildings of the Mohammedans, and a rivulet which flows northwards to a lake, and has two villages at its further extremity.

15th.—A tract nearly similar to that just described, leads through Khánúm Khán (the lady's khán) to Ládik, or Jórgán Ládik,† a village situated on a mound of ruins. Numerous fragments of Byzantine architecture, as well as its present name, make it not improbable that this is the site of Laodicea Combusta, placed by some ancient writers in Lycaonia, by others in Pisidia or Phrygia, which serves, at all events, as Cellarius remarks, to assist in determining the part of Lycaonia in which it is to be sought.

16th.—The valley of Ládik, which is in a kind of recess, is bounded on the south-east by a hilly district, composed of brown and blue argillaceous schist, passing into common mica-schist, with veins of quartz, lying under is limestone. A remarkable rock on the top of the hills to the right is called Kiz Kayá-sí (maiden's rock); and 2 miles on the road are the ruins of what was evidently an old Greek village; beyond which, an unproductive valley opens upon the great plain of Kóniyah. Not far from Kóniyah, there is a Greek village and monastery of some antiquity on Mount Siliyá.

19th.—Kóniyah, as one of the great cities of Asia Minor, has been much visited by European travellers, who have each, from the days of Niebuhr to those of Colonel Leake and Mr. W. J. Hamilton, contributed their remarks upon its past and present condition. It appears that the first of these travellers made a

\* Or I'ghún, Itin. de Constant. à la Mecque, p. 93.—Ed.

† Yúrukán Ládik, *i. e.*, Wandering (Turkománs) or Láziķiyeh Karamán, *i. e.* Karmanian Laodicea.—Ed.



sketch of the town, which will no doubt embrace its greatest peculiarity, the distribution of its walls.

After visiting many of the great towns of Asia Minor, Angora, Káiseriyah, Kāstāmúní, &c., Kóniyah certainly appears the most fallen and ruinous of all, and yet it stands among the first, in its early renown for size, population, and riches. Strabo particularly alludes to its being well built, πολίχον εὖ συνωκισμένον. Pliny says, "urbs celeberrima Iconium." In the Acts of the Apostles (ch. xiv. v. 1.) we find it noticed as frequented by a great multitude of Jews and Greeks. In the ecclesiastical notices, according to Cellarius, it is also placed first upon the list as a metropolis. Hierocles also, "Iconium metropolis."

Independently of other circumstances, numerous monuments of various kinds, principally in the Saracenic style of architecture, fully attest that under the Mohammedans, this city has always been one of great celebrity and sanctity, as well as a seat of learning. There are at present the remains of upwards of twenty medresehs or colleges, a number nearly equal to that of Baghdád, the city of the khalifs themselves.

There are still several handsome Mesjids or Jámí's in Kóniyah. The Sheríf Altún Jámí' is the largest; next comes that of Sultán 'Aláu-d-dín, our Aladdin; and then the Jámí' of Sultán Selím, whose building exploits would have delighted the heart of a Procopius.

Many of the sepulchral chapels are also of great sanctity. In the journal of the sixth campaign of Suleimán (1534) we find the Sultán halting at Kóniyah to visit the tomb of Mevláná Jelálu-d-dín.\* Several that now remain are objects of veneration, and even of pilgrimage; but generally speaking, they and the colleges are crumbling into ruins.

'Alí Páshá, then in command there, had about 6000 regular troops at his disposal, of which about 500 were in Nígdeh, and 100 in Sárandah. The militia of the Páshálik had been disbanded since the reverses at Nizib; and the guns attached to that service were sent to Constantinople. A sort of quarantine, limited to the fumigation of persons, had been established at the entrance of the city.†

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*Nov. 22nd, 1840.*—This day, says Mr. Ainsworth, we quitted Kóniyah, travelling over its wide and level plain in a direction S. 50 E. On this plain, the beautiful bird called the Aleppo plover (Lesson, *Man. d'Ornithologie*) first makes its appearance. It

\* Rúmí, author of the *Meşnaví*, a much-admired ethical poem in Persian, and head of the Mevleví order of Dervishes or Fakirs.—Ed.

† The remainder of this paper is extracted from Mr. Ainsworth's Report.—Ed.

soon almost entirely supersedes the common plover, pewit, or lapwing; and is met with as far as Persia.

The soil of the plain became soon very saline, and communicated its peculiar character to the vegetation. It afforded us much amusement to observe the sudden impulse with which the camels rushed towards the now frequent tufts of *Mesembryanthemum* and *Salicornia*, reminding them of plains with which they were probably more familiar than with those of Asia Minor. After travelling about five hours, we came to a marsh, where the road was covered with small frogs, as if they had been showered down from the sky, but in reality they had only issued from the waters; and various birds of prey were enjoying an abundant repast.

In another hour we arrived at Khákhun, a village of herdsmen, situated in the midst of the marsh, and there we reposed for the night.

23rd.—We started at an early hour, in the midst of a dense mist, which only allowed us to distinguish that we were travelling through the same marshy ground. About 7 miles from Khákhun we came to Ismíl, a large village just without the marsh, and built upon a dry gravelly plain, not far from the extreme W. of the Karájah Tágh.

At about 7 miles further from Ismíl the weather cleared up, and we found by back bearing, the hill of Siliyá above Kóniyah N. 88 W., the culminating point of Karájah Tágh N. 86 E., and Hasan Tágh N. 66 E.

About 4 miles beyond this, the ground began to rise a little; and, passing a slightly elevated tract of coarse limestone, we entered upon a grassy plain affording pasture to numerous flocks. 6 miles further on we passed over some higher ground formed of coarse limestone, then descending a rocky terrace about 20 ft. in height, entered upon a cultivated plain continuous with that of Sultán Khán and Kóch-Hişár (Hasan Tágh bearing N. 56 E. about 15 miles), which as far as Kará Buñár (Black Spring), at the foot of Karájah Tágh is only about 2 miles in width. I am not aware whether Mr. W. J. Hamilton has corrected the geography of this part of the country; but in most maps, as, for example, that published by the Society for the Diffusion of Useful Knowledge, Hasan Tágh is placed nearly a degree in latitude to the N. of Karábuñár. Karájah Tágh is continued northward to Hasan Tágh by low hills which border the plain previously noticed, and to the identity of which, with that of the lake of Kóch-Hişár, I can bear sufficient testimony, as I took the bearings of many known points, more particularly the remarkable volcanic hills near I'n Aví and the Murád Sú Gól.

The same chain of hills (incorrectly marked in the maps as the

Bulghâr Tâgh) is connected also to the E. with Hasan Tâgh by low hills and volcanic cones dispersed over a rocky district. The road from Ereglí to the Gólek Bógház, it is important to remark, is not carried through Taurus (Bulghâr Tâgh) as on the maps, in a direction S. of E., but for 4 hours at first to the magnetic N. 50 to 60 E., having all that time the plain of Bór or Tyana to the left, and between the traveller and the foot of Hasan Tâgh and its more southerly cones. I was the more anxious to form a correct idea of the more southern extension of Hasan Tâgh, as upon that depends in a great measure whether or not the road given in the Theodosian Tables, after passing by Congustos (Túsun Uyuğ) and Petra or Perta (Uyuğ Boyád), and crossing Strabo's route from Ephesus to Tomisa, at a point where Mr. Hamilton fixes Nazianzus, and where we found Gelvedeng and other ruins, passed over the mountains to Tyana, or continued along the plain from Uyuğ Boyád towards Karâ Buñár. I am now satisfied that Mr. Hamilton and ourselves visited the spot where these three ancient roads met; for Karâ Buñár is quite out of the way from Petra to Tyana, whither the Theodosian road is carried: and Mr. Hamilton has described the route in the Antonine Itinerary as it is extended from Andabilis to Nazianzus and Archelaïs Colonia (Ak Serâi).

The facts here detailed are also of importance towards ascertaining the reason why Cyrus and Alexander should pitch their tents at Kilisâ Hışár, in the neighbourhood of Bór, which appears so far N. of Ereglí, and has been shown so satisfactorily by Mr. Hamilton to be the ancient Tyana. The knowledge of the direction of the road from Ereglí at once shows that, except from the position of the Turkish posts, the traveller would have no need to go to Ereglí in his road across Mount Taurus, the passage through which is to the N. of that town, and is, moreover, inaccessible to an army for a large part of the year; and at other times, hardly to be approached, on account of the extensive and almost impassable morasses, occasioned by the drainage into that basin which forms the ancient Tyanitis, the peculiar features of which are now well known.

The town of Karâ Buñár is inhabited chiefly by Turkománs, who feed their flocks in the plain in winter, but emigrate in summer towards various points of the great plain of Sultán Khán. Its houses are almost all of one story, rather from fashion than deficiency of means; for many are well furnished, according to the taste of the country. Sultán Selím built a handsome jâmi' here, but it is falling into ruins; attached to it, there is also a large well-built khán covered with lead, the greater part of which has long since been converted into bullets. There are several salt-petre works at this place.

Extending southwards from *Ḳarājah Ṭāgh*, and closing the Plain of *Ḳarā Buñār*, there are, first, a rocky cone with naked stones like ruins, then a pair of twin conical summits of volcanic cinders; and further on, a higher cone of similar character, with a truncated summit—a feature which here belongs to all the hills of volcanic cinders, whether black or white (augitic or feldspathic); and whether in the crater of volcanos, or on their sides: this peculiarity has also been observed by Mr. Hamilton. Beyond these truncated cones a rocky range of low hills sweeps round to the W. as far as a group 3 miles to the S.; and extends thence in low rocky hills to a conical mound, on which there are the ruins of two towers, overhanging the town of *Ḳarā Buñār*; to the S. of which, there is a steril, stony district.

24th.—About 3 miles from *Buñār*, in a direction to the S. 55 to 60 E., after ascending these hills of volcanic rock, there occurs a remarkably distinct crater, with a heap of cinders in its centre, forming a truncated cone. The lips of the crater, which is about 60 feet in depth, are for the most part formed of solid black basanitic lava; but white and yellowish-white tephrites, besides other mineral substances, are found in it. The cone in the centre appears to be entirely formed of black cinders (augitic), and is about 100 feet in height. The bottom of the channel, left between the outer walls and the central cone, is for the most part filled with water, and in places afforded a fine crop of grass for the horses and cattle which were quietly feeding there. A little beyond this, we came into a long narrow plain, stretching S. 76 E. along the foot of *Ḳarājah Ṭāgh*, passing other conical mounds of black cinders till we came to the last slope of the hills over the valley or plain of *Tyanitis*, *Ereglí* bearing S. 68 E. at a distance of 12 miles or upwards.

In the midst of the marshy plain over which we had now to travel, and where the central channel “drags its slow current lazily along,” is the village of *Hárhán*, inhabited by herdsmen. There are two roads to this place, one used in winter very circuitous, the other in summer, by which we were still enabled to pass; but great part of it was already under water. Hence we had alternately marsh and dry ground as far as *Ereglí*, situated at the foot of the western extremity of the hills which gradually rise from thence till they are lost in the snow-clad summits of *Bulghár Ṭāgh*. It is a poor place, containing 800 houses of Mohammedans and 50 of Armenians, and has a small market. Notwithstanding its position, it was not garrisoned. Being embosomed in trees, to the traveller coming from the *Gölek Bógház*, *Ereglí* has a pleasant and inviting appearance, nor are its inhabitants inhospitable.

25th.—We started in a direction of N. 50° E., and passed two

rivulets flowing to the N.W. Our road lay along the low hills which border the plain to the E., and are composed of red sandstone in bluish cream-coloured beds, conglomerated limestone, and gypsum. To our right we had the lofty chain; for the proper name of which I had already inquired of several persons, who all called it Bulghár Tâgh. As I thought, however, the name might vary in different places, I again inquired, when resting at its foot, and also in the villages on the Cilician side, when the name was uniformly given, so that I feel convinced every future traveller on this road will find it universally in use. Ramadán-O'ghlú, &c., and the other names given in our maps, are probably derived from Turkomán tribes inhabiting its lower ranges at the eastern or Cilician foot of the chain.

However it may be with regard to the plain of Nigdeh at present, it is certain that with regard to the Gólek Bógház\* no correct idea has yet been given to the world; and the peculiarity of its hydrographical features are not pointed out in any work that I have seen. Its peculiar characteristic is, that the source of the Savus or Seihún is in the low hills on the western side of the chain, and that the Pass, after following the course of these waters for some distance, turns *up* the valley of a tributary stream, at the summit of which, and at an elevation of 3812 feet, are the fortified posts of Mohammed 'Alí Páshá; immediately beyond which, the waters again run to the E. and S. of E., rushing through a tremendous gap in the mountains, and thence flow directly towards the Cydnus or river of Tarsus. I shall describe this pass more in detail hereafter; but have now ventured to record, in the fewest words possible, its leading features, that they may be better understood; for travellers have hitherto uniformly regarded the stream that passes through the above-mentioned gap as the great river of the mountain-pass which Col. Chesney and the writer of this paper crossed in a journey through the Bádinján O'ghlú district, and found it to be a tributary to the Seihún.

At a distance of 12 miles from Ereglí we came to a small village called Kayán, with a rivulet flowing N.W. Our route now turned to S. 60° E., as if bent upon carrying us into the heart of the hills. We ascended a short distance among low hills of red sandstone and sand; then up a hill of conglomerate and limestone: beyond which was a cultivated field. At this

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\* The description of the Gólek Bógház, or Pass, through the Bulghár Tâgh, is not included in my Memoir upon the Cilician passes, as I had at that time only been partly through it. It is therefore well to notice here that they are geneally called by the ancients the Cilician gates,—Strabo (lib. xii. p. 370), Arrian (lib. ii.), Cellarius (lib. iii. cap. viii), but neither Arrian nor Quintus Curtius (lib. iii. cap. iv.); nor, I believe, any of the historians of Alexander's campaigns confound these gates with the Amanian, which "were near the sea." Cicero (lib. v. ad Attic. epist. xx.) calls them the gates of Taurus, leading from Cappadocia into Cilicia.

point, the few drops of water first collected began to flow to the N.E. This was about 4 miles from Káyán and 3 from Kolú Kúshlá; and immediately beyond its source the rivulet flows through a little pass in basanitic rocks, and continues along the valley in a direction of N.  $70^{\circ}$  E. till it opens upon the cultivated plain of Kolú Kúshlá, where it is joined by other small streams, which united, flow down along valley and pass on stretching to the S.  $80^{\circ}$  E. The hills now begin to attain a somewhat greater altitude. Those on the S. side of the valley are composed chiefly of gypsum; those to the N., which are more lofty and rugged, are composed of trap-rock, more especially basanite, spilite, wacke, and tuffa. Kolú Kúshlá is a cleanly aggregation of Turkomán houses, with a large khán and a post station.

26th.—This day's journey carried us to the foot of the central chain of the Bulghár Tágh. And it appears, from an examination of the rocks and fossil organic remains, the details of which would be out of place in these notes, that the western, like the eastern declivities of Taurus and its outlying chains, are composed principally of tertiary deposits. The succession of these rocks on the eastern side has been described in my "Researches, &c." And it may be remarked that the main difference between the two aspects of the same chain are, that on the western side the variety of formations is by no means so great as on the eastern, while the frequent and extensive disruption of igneous rocks amid the formations on the W. side has given rise to an infinite variety of altered rocks too numerous to be here specified; and has, at the same time, rendered the existence of organic remains much more rare, and the age of the formations more difficult to determine. It is necessary also to remark, for the use of future travellers, that the road we followed upon this occasion, direct from the pass to Adanah, presents neither the great variety of formations, nor the vast number of gigantic fossils, which I met with on my former journey from Tarsus to the lead-mines in the valley S. of the Gólek Bógház. Near the Roman arch, on the road to Tarsus, the tertiary limestones are associated with mica schists; and in the great chain of Bulghár, cretaceous rocks, converted into a non-fossiliferous, hard, and granular rock, are piled up in precipices of fearful height and grandeur upon the same mica schists; but I have not detected in any part of the chain sedimentary formations which could be said to be inferior to the chalk.

The waters of the valley of Kolú Kúshlá sweep gradually round from N.  $85^{\circ}$  E. to S.  $40^{\circ}$  E. Farther on, the valley widens and contains one or two small villages at the foot of the hills; and gardens with vineyards and groves of walnut-trees ornament the rivulet's banks. About  $3\frac{1}{2}$  miles the lateral valley of Kolú Kúshlá terminates in a more extensive valley, nearly parallel to

the central chain, and containing a large rivulet, which flows from the S.W. This valley is bounded to the E. by a rocky range of hills clothed with wood, composed of limestone, sandstone and altered rocks reposing upon rocks of igneous origin. And between this chain and the loftier summits of Bulghár is the valley of Aluguga, also with its tributary rivulet.

The general direction of Bulghár Tágh, from a variety of bearings, may be said to be from E.N.E. to W.S.W. The direction of 'Alí Tágh, the great snowy range N. of this, I believe to be different; and probably, in consequence of a different structure; the determination of this point remains for future travellers, when the prolongation of Taurus to the Dúrdún Tágh, and by Ak Tágh to the sources of the Tigris, will be completed. The line most wanted in the geography of this part of the country, after the determination of the sources of the Seihún on our previous journey, would extend from Nígdeh to Mar'ash, by which the composition and configuration of 'Alí Tágh would probably be determined, and the various tributaries to the Seihún and Jeihún satisfactorily delineated. So well convinced have I long been of the value of such a determination, and of a description of the interesting country around Farráshah, that, had I on this occasion been travelling for geographic purposes solely, and not making a winter-journey to Móşul, scarcely anything would have prevented me from exploring those tracts. Col. Chesney's route to Síş, and Lieut. Murphy's bearings at Anazarba ('Ain Zerbah), will however do something. I heard that M. Fischer, of the Prussian corps in the service of the Sultán, who superintended the construction of the Turkish outworks in the Gólek Bógház, had collected many materials for improving the geography of the Taurus; and that the Barons Moltke and Wincke, who laboured hard in the same cause, returned after the battle of Nizib by Bóstán to Malátíyah, a very desirable line.

After entering the valley of the main tributary to the Seihún, at a distance of 6 miles, the road leaves the valley of the river, for a short time crossing over hills of altered rocks, with a ravine through which it would be very difficult to convey heavy guns. From these eminences the road passes almost directly along a gentle slope, to a point where the first-mentioned stream coming from the left is joined by another large rivulet flowing from the right, and coming from the valley of Aluguga before noticed; these two rivers united flow through a somewhat narrow pass, and this point has been made the seat of the Turkish outworks to protect the Gólek Bógház. The peninsula between the two rivers commands the centre of the valley, and is occupied by a battery, which at the time of our visit consisted of four guns and two mortars. The valley below the junction of the two streams

is crossed by a palisade which stretches up the hill, upon the declivities of which, to the left, are two small batteries at different heights, and on the right side similar entrenchments exist, one at the foot of the hill, the other on the declivities. This spot is called Chiftlik-khán, and there is also a bridge besides the Kerván-seráï. It is now defended by a few gunners and Arnáuťs, whose chief business appears to be to stop the deserters who continually pass through the defile. As there was no resting-place here, nor onwards for some distance, we turned up the valley of Aluguga, by a bad road. About  $2\frac{1}{2}$  miles up the valley, we came to the Kishlá\* (winter-quarters), which we were disappointed at finding yet untenanted, so we had to proceed about the same distance further, when we found the villagers occupying two separate spots. About 3 miles further up, a mine of argenteriferous galena is worked upon a small scale. The valley, which pursues a direction of from  $60^{\circ}$  S. to  $70^{\circ}$  W., to from  $60^{\circ}$  N. to  $70^{\circ}$  E., is generally narrow, but contains numerous vineyards and many plantations of walnuts and cherries; the latter, which are of three different kinds, are much sought for both at Kóniyah and at Adanah. There were many picturesque points of view in this wooded and rocky valley, above which the central chain of Bulghár towers along its whole length almost perpendicularly to a height of upwards of 1000 feet above the spectator. In this central chain we only observed limestone resting on talc and mica schists, but in the outlying chain were a great variety of altered rocks, among which, besides a variety of spilites or amygdaloidal formations, was a remarkably bright red rock, which also abounds in other parts of the passes, sometimes with a large conchoidal fracture and even texture like a clinkstone or phonolite, but more generally rudely compact, with a splintery fracture like a jasper or thermantide. Besides, there were talc and mica schists as at the Yailá of Aluguga, diallage rocks, bluish steatitic schists, and schorlitic steatites.

27th.—Having regained the junction of the streams at Chiftlik-khán, our route lay down the valley S.  $82^{\circ}$  E. A little beyond the khán we found a rivulet, the waters of which were warm, but I had not a thermometer at hand to ascertain their temperature. About 5 miles down the valley there is another palisade carried across a narrow portion of the pass, and a battery is placed upon the heights above. This part of the pass is well wooded:  $1\frac{1}{2}$  mile further on, the road is hewn out of hard rocks of saccharoidal limestone, and on turning the corner we passed the first Turkish outwork, consisting merely of a wall carried in part across the valley, with an adjacent guard-house. There are a few soldiers at both the stations last mentioned.

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\* Here pronounced Kishlá.



Immediately beyond the Turkish outwork is a bridge lately built by Mohámméd 'Alí, and named from a spring close to it, called Shakar bunár, "Sugar spring," clear or fresh water being always designated as "sweet" by the Orientals: hence the "sweet waters" of Constantinople, a muddy rivulet flowing into the "golden horn."\*

The valley opens a little beyond this, and here are the first guard-houses of the Egyptians; and 10 min. beyond them the road permanently leaves the valley of the Seihún, which flows on in a south-easterly direction, while the road is carried over hills of diallage rock, first S. 30° W., and then S. 10° W., down to the banks of a large rivulet flowing from the S.W. At the point where the road leaves the tributary of the Seihún, Ibráhím Páshá had established a quarantine of 10 days, which happily for us had lately been done away with. It is certainly remarkable that quarantine regulations should have become so prevalent in the East, where each Páshá establishes them in his territory: thus Háfız Páshá had them between Malátiyah and Sívás; the Páshá of Kútáhiyeh on entering his government; Hájí 'Alí on entering his capital; and Ibráhím Páshá suggested the more vexatious annoyances at Gólek Bógház and Beirút; while Iskanderún, the Orontes, and Latákiyah were left open.

Travelling up the new valley we had now entered, we reached its crest after a journey of 2 hours and upwards, and there found the village and market which the Páshá has established for the benefit of the soldiers stationed at these important posts; but we were detained there a day waiting for horses. The post, according to the Turkish system, having been done away with in the Páshá's territory as well as the tátárs (couriers), a few horses alone are kept along the great lines of communication for carrying despatches solely, which is done by successive Súrujís at each stage; while for the traveller's convenience the horses are sent for, as occurred in the present case, from surrounding villages, some of which were many hours distant. The price is also augmented from 1 piastre per hour in the Sultán's territory to 2 piastres per hour, besides the inconvenience of a constant delay.

The outworks established in these passes by Mohámméd 'Alí are much more important than is generally imagined, and instead of being mere lines of fortification, from which to advance upon a hostile country, their lasting and durable character, and the care, skill and expense bestowed on their construction, show that they are considered as a permanent line of frontier by those who ordered their erection. They are quite different from anything observable

\* The "sweet waters" is merely a literal translation of the "eaux douces" or "aque dolci" of the Franks, established at Constantinople; the spring having no such name among the Turks.—ED.

in the Sultán's territory, even at Várnah or Silistria, and calculated to oppose an enemy more skilled in war than the Turks, being in point of execution quite equal to what is commonly met with in the North of France.

The plain, if it may be so called, which occupies the level summit between the waters of the Seihún and the river of Tarsus, is about an English mile in width, and faces the magnetic point of N. 30° E., the approach to it being, as before said, up hill and through a broken and woody country. Throughout its width it is defended by eight different batteries of stone, each surrounded by a foss, and approached by a drawbridge with double gates instead of portcullis, leading into stone magazines of admirable construction, and in every point bomb-proof: some of these are connected, and the intervening foss is then casemated. To each battery a signal-staff is attached. The system adopted in their construction is that which I have always heard military men mention as now most approved of; that is to say, the rampart does not rise much above the soil, the greater part being sunk, and the ditches here have been dug in solid rock, which would render the cutting approaches a difficult and tedious undertaking. All the batteries command the same front, and are so placed as to intersect one another and not leave a sheltered spot, so that each battery must be silenced or taken in detail before the pass could be said to be gained. On the heights above to the E. there are also additional and extensive lines, beyond which, up to the summit of the mountain, there are towers of observation, and at the western extremity there is also a stone fort with barracks.

A ravine or low uncovered way in the centre of the plain leads to the place where the soldiers are in security, and where the Páshá has built himself a commodious house. Blacksmiths, carpenters and builders are also kept here upon a large scale, both for repairs and also to carry on the works, which are not yet completed. There are upwards of 100 guns distributed in the batteries. The amount of gunners and soldiers stationed here at present, and chiefly living in log-huts, is not however nearly sufficient for the defence of these extensive lines.

By observation with the boiling-point thermometer, the elevation of this culminating level was found to be about 3812 feet: we had sharp frosts both the nights that we spent here, and congratulated ourselves that no snow had yet fallen.

29th.—Our road now descended rapidly, with the tributaries of the river of Tarsus, into a pass in the direction of S. 20° W. A short way downwards we found a small battery; but it appears to be abandoned and does not come within the scope of the existing fortifications. Immediately beyond this is the most formidable part of the Gólek Bógház, where an ancient but illegible in-

scription has fallen, with the rock upon which it was cut, with its face downwards into the stream, and traces of ancient chisel-work attest the labour and trouble spent by former conquerors in opening a way through a narrow gorge, amidst lofty limestone precipices, which one would think a handful of men could convert into another Thermopylæ.

Below this pass vegetation becomes very luxuriant, and many changes in its character afford abundant evidence of a change in climate on the Cilician side of Taurus. The forests consist almost exclusively of pines of fine growth, but not so large as in the Ilik T'ágh. Plane-trees grow by the water's edge, while the bottom of the valley is filled with a dense covering of evergreen oak, bay, laurel, quince, wild fig, wild vine and cedar. At the present moment the pink cyclamen and blue crocuses are in flower, but the myrtle and arbor Judæ (*Cercis siliquastrum*) do not appear till a little lower down, where the wild olive and jujube\* (*Rhamnus jujuba*) become common, and the banks of rivulets are clothed with the bright red oleander.

On the right-hand or S. side of this pass are two bold rocky summits of limestone, towering, bare and precipitous, over the surrounding forest: the most western of these bears the ruins of a castle, with crumbling walls and round towers, said to be Genoese: immediately below this, and prettily embosomed among trees on the mountain side, is the village of Gólek, while in the valley beyond and further southward, is the village attached to Mohámmad 'Alí's mines.

At a distance of 5 miles from the rocky gap we came to a khán where I had slept on a former occasion, and here the road divides itself into two branches; the one follows the course of the valley and its streams, and leads to Tarsus; the other turns over the hill-side in a direction of S. 25° E., and leads directly to Adanah. We followed the latter route, as I had been to Tarsus on a previous occasion; but I would recommend future travellers to go by Tarsus, as they will then get good quarters for the night, while on the Adanah road they have to go out of the way to find a village, and there is not above 2 hours' difference in the length of the roads.

Passing by a ruinous khán, near which is a large deposit of travertine from a rivulet which appears to be remarkably loaded with lime, we turned round the hill's side along a wood and by tombs, due E. to S. 80° E., till we entered a glen of limestone, 4 miles from the khán; and 2½ miles down the glen, which opens in a south-easterly direction, is a khán with one or two adjacent

\* "Locust-tree," says Mr. Ainsworth—evidently by an oversight; as that tree is the *Ceratonía silíqua* or charob: in America *Gleditschia triacanthos*, *Robinia pseud-acacia*, are called "locust-tree."—ED.

houses delightfully situated amidst abundant waters, surrounded by trees and sheltered by an overhanging cliff.

The road lay hence over the hill's side, leaving the glen and soon entering upon a hilly country of tertiary rocks;  $1\frac{1}{2}$  mile from the last-mentioned khán there is a ruined castle or square beacon resembling in structure many of the more simple old Irish castles. There is another of a similar character upon a wooded and conical hill, 1 mile to the right. At this distance it appears like a round tower, but as we arrived early at our village, I had an opportunity of visiting it. Passing hence over some zoophytic limestone, and crossing a rivulet hid among oleanders, we came to a low country of rhomboidal sandstone, and turning off to the S. for about  $1\frac{1}{2}$  mile, came to the same village where Colonel Chesney and a small party rested on a former occasion, and from whence the Colonel and myself, having gone out the ensuing morning to shoot partridges, lost the remainder of the party, and were obliged to find our way through the country of Bádinján O'ghlú to Sís, a journey which occupied us three days. This Bádinján O'ghlú is a Turkomán of great consideration, from the extent of his possessions and the number of his followers, in the fertile country of Cilicia. He is now, and has been for many years, the civil governor of Adanah, which is, however, always the residence of one or more of Mohammed 'Alí's generals.

The village at which we had now arrived, and the name of which, by some unfortunate quarrelling with the inhabitants, I failed to obtain, commands a very extensive and truly magnificent prospect. The greater part of Cilicia Campestris, with the towns of Tarsus and Adanah, are stretched at the foot of the hills, and the horizon is only bounded in the same direction by the shores of the Mediterranean; while Dúrdún Tágh, Amanus, and in front Jebel El-Núr, form the background to the E. It may be worth while to record one or two distant bearings from this point. Jebel Akra' (Mount Casius), S.  $21^{\circ}$  E.; Rás-el-Khanzír (Boar's Head), S.  $27^{\circ}$  E.; Bèilán-defile, S.  $47^{\circ}$  E.; N. rock of Jebel El-Núr (see Beaufort's Karamania), S.  $68^{\circ}$  E.; N. end of Amanus (Darius' pass), S.  $82^{\circ}$  E.

30th.—We soon regained the great road to Adanah, which led along a valley from S.  $15^{\circ}$  to S.  $20^{\circ}$  E., and about 9 miles from the village came to another square ruinous castle, which, like the other two, evidently belonged to some European possessors of the rich and fertile plain of Adanah and Tarsus. We finally entered upon this plain at a short distance beyond the ruin; and as we are now leaving the Gólek Bógház, I may be allowed to remark, independently of its interesting geographical features previously noticed, that it would also be impossible for any traveller to ride through the whole length of this pass without being much struck

with its varied beauties; I can now compare it with four other long and tedious passes through Taurus, one of which is associated in my mind with only painful recollections, and although not so difficult, and perhaps surpassed in one single point by the Dúrdún Tágħ—where the road carried over the hill suddenly comes upon the Pyramus, rolling along a deep and dark chasm many hundred feet below, sharp precipices on all sides, and the shining peak of Dúrdún towering up to the skies above, with no visible road left for the astonished traveller;—rivalled also perhaps in the pass of Ak Tágħ by the beautiful valley of Erkenek;—still the Gólek Bógház contains by far the most numerous and varied points of bold and massive mountain scenery of any of the other passes. The superior height of the mountains, and the gigantic scale of the scenery of the Alps, does not allow of their being fairly compared with the chain of Taurus, in every respect inferior to them; but the able illustrator of the former (Mr. Brockedon) would also find much that would be highly worthy of his pencil in the Gólek Bógház. The differences of elevation between the two will no doubt be hereafter ascertained, but it will be more difficult to decide upon their peculiar claims to distinction. There are in the Gólek pass open spaces like the Vallais, but in the Vallais, on each side, are long continuous mountain ranges, which ultimately (especially to a pedestrian) become monotonous, while in the Gólek, mountain succeeds to mountain to the right and left, and vast semicircular precipices support broken glaciers piled one upon another in such profuse confusion and inimitable grandeur, that it is impossible to tear oneself from a scene which, wherever one turns, presents a new wonder. In its more rocky, craggy scenery, the Gólek is, as far as I have seen, quite unrivalled: such a succession of fallen masses, rocky projections and steep cliffs, will not admit of description; nor would they be represented by the Trosacles ten times magnified. I need not mention the vegetation or the habitations of men, as adding to the peculiarities of these scenes; but one thing is deserving of notice—the lammer-geyer or condor of the Alps is rarely seen by the traveller, except at heights at which its size and strength can only be conjectured; but the great bare-necked vulture, which represents in Taurus the condor of the Andes, and the lammer-geyer of the Alps, and is a larger bird than the latter, may be sometimes seen in dozens together, waiting till some surly shepherds' dogs have had their fill of a newly-killed animal, and they are never wanting amidst their favourite crags.

The features of the plain of Adanah are very uniform: here and there is an occasional tree, most generally the locust-tree (*Caratonia siliqua*), a peculiarity in which it differs from almost every other plain in Asia Minor or Syria. The thorny acacia,

the caper (*Capparis spinosa*), and two species of robinia, are its only shrubs; its flowering plants and grasses are numerous. Its more remarkable tenants are gazelles, foxes, hares, jerboas, ground squirrels, and large and small bustards. It is celebrated for its cultivation of cotton, and now produces much sugar-cane. There are also many date-trees, a further proof of the warmth of its climate.

The learned President of the Royal Geographical Society, in his Anniversary Address for 1838, has very truly remarked of the Cilician, Amanian, and Syrian passes, that they included "a line of march which, from its being so frequently mentioned by historians as that which was preferred to all others in the communication between the eastern and western parts of the continent, must have possessed advantages in a military and commercial point of view which have not yet been sufficiently developed, but resulting as well from the nature of the countries to be traversed as from the facility of commanding supplies for the support of armies." Without proposing to myself to unfold even the majority of these peculiarities, I may perhaps be allowed to point out what appeared to me as leading features in the case. The first of these is that, from the sea-shore to the northern termination of 'Alī Tāgh, except some foot-paths and an occasional bridle-road, there are very few feasible passes through Taurus. The first of these—the maritime pass—to the W. of Sōlah, afterwards Pompeiopolis, has been put into a state of defence by Ibrāhīm Pāshā, but I understand that it is difficult of access. There are other foot and summer roads between this and Ereglī, from which latter place is a summer bridle-road across Bulghār Tāgh. This is the same as that noticed in the Itinerary to Mecca as the pass of "Karghah Kesmez" (impassable by crows). Another bridle-road to Tarsus takes its departure from where I before noticed is a khān; this was apparently much in use by the ancients. On one part of its course are a number of sepulchral grottoes, on another an inscription, and nearer to Tarsus the remains of an olden road, a sarcophagus and arch, the probable history of which is contained in Rennell's "Western Asia;" but this road continues for a long while in the hills, and is in many parts difficult. I speak here from personal examination. It is not improbable that it was by this road that Cyrus sent the Cilician queen, under guard of Menon, as the most direct to Tarsus. It appears also to have been the road followed by a part of Alexander's army, and is the same as the "It-gelmez" (inaccessible to dogs) of the Mecca Itinerary. Of the passes through Taurus N. of Gólek Bógház, I know little; but in our journey through the Bádinján O'ghlú district, Colonel Chesney and myself heard of none till we came to Sís. Indeed, the reasons for the preference given by

the Greeks, Persians, Romans, Turks and Crusaders, to the same pass may be inferred from the words of Strabo (lib. xii. p. 370), when he says, "*Tauro ad Cilicias portas: juxta quas facillimi ejus sunt omnibusque communissimi in Ciliciam et Syriam transitus.*"

After the necessities of the case, come "the facilities for affording supplies;" now these apparently always were, and still are, of the first order in "*Cilicia Campestris.*" Adanah has every winter a garrison equalling that of Aleppo, and is considered the third town in Syria. Tarsus, its port, is the place of residence of a French consul and English vice-consul. The last agent, Mr. Jones, loaded as many as twelve vessels annually from this port. The advantages were still greater when the populous Anazarba, afterwards Cæsarea, communicated wealth and productiveness to the centre of a now neglected district, and Mopsuestia was in its glory. When Mallus had fallen, a Christian monastery still rose upon its ruins. Sís, in the same plain, covered with castles (Túm, Seliyah, Meráneñ), is still the seat of an Armenian patriarch. From Issus by Baïæ to the Syrian gates is a garden of oranges and myrtles. Cicero, in his *Epistles* (and I regret not to have the passage at command), particularly notices the resources of Cilicia; and Albertus Aquensis, according to Cellarius (lib. iii. cap. vi. p. 255), talks of 3000 ships sailing from the port of Tarsus at once. Of all the sites between the pass of Taurus and that of Syria, Iskenderún, or Alexandretta, is the only one which may be said to have attained greater importance in modern times than it possessed at a more remote epoch.

*Dec. 1st.*—To return to our journey: we found at Adanah Ahmed Páshá and Khurshíd Páshá, who received us very kindly; the first speaks French, and was well known to us previously. In this hot plain, the soldiers were in their summer dresses, the thermometer marking at midday  $22\frac{1}{2}$  cent. ( $72\frac{1}{2}$  Fahr.), and in the sun, without blackening the bulb,  $47^{\circ}$  cent. ( $116^{\circ}$  Fahr.) The castle, which was being destroyed when last here, remains in pretty nearly the same condition. An omission of that journey was now filled up—the river of the Seihún, at the bridge, is 325 feet in width.

Adanah, it may be remarked, although not so distinguished in the annals of history as Tarsus, was still in ancient times a town of much importance. It is noticed by Ptolemy and Pliny. Stephanus Byzant. says, "*Ab Adano, Cœli et Terræ filio, conditam esse.*" According to Dio Cassius, its inhabitants used to wage war with the people of Tarsus. The progress of the Crusaders, it will also be remembered, was marked by a sad quarrel at this place. The Bishop of Adanah had, according to the Ecclesiastical Notices quoted by Cellarius, a seat in the Councils of Nicæa and Chalcedon.

3rd.—Travelled over the plain to Misis. At this moment there were flocks of many thousands of small bustards on the plain. Misis is sadly fallen since my last visit, and contains scarcely thirty families. The Pyramus is perfectly navigable, and as well adapted to small steamers as far as this place and 'Ainzarbah as the Seihún is to Adanah; and I have often thought what a happy scene this most favoured vale of Cilicia would be in the hands of an industrious people, like the people of the United States. The numerous notices of Mopsuestia as well as its admirable position and extensive ruins, attest its former importance, which render its present condition so much to be regretted. In a former memoir, I compared the distances given by Xenophon and the Itineraries to Mecca and Jerusalem, with those obtained by the Surveys of the officers of the Euphrates-Expedition, and I have collected the various orthographies of this interesting site, but do not give them for fear of being tedious. For its importance, as further illustrating the peculiarities of this country, I may be allowed to quote Procopius: "Eam adluit amnis Pyramus, singulare urbi ornamentum ferens;" and an inscription given by Cellarius after Gruter, p. 255, which, bearing the title of Antoninus Pius, says, "Evergetæ ac servatoris Hadrianæ Mopsuestiæ Ciliciæ, sacræ, liberæ et Asyli, suis legibus viventis, et fœderatæ ac sociæ Romanorum."

4th.—We had a continued and heavy rain on our journey to-day. I was aware of the few comforts to be obtained at the miserable village of Kúrd Kúlák (wolf's ear), but scarcely anticipated the misfortune of being detained a day there, which, however, was rendered actually necessary by the bad weather. Thursday, the 6th, we passed the Amanian gates (Demir Kapú) and the ruins of Castabulum, and kept along the sea-coast, from which the ruins of Issus were scarcely visible, and hence, no doubt, the reason of their remaining unnoticed till the time of the Euphrates-Expedition. This line of road enabled me, however, to observe that the Pinarus, after losing itself in an extensive marsh, empties itself into the sea by a variety of small streamlets, which has occasioned much discordancy among travellers. Since the insurrection at the time of the campaign of 1839, Ibráhím Páshá has done his best to open a market in the long-deserted but beautiful bázár of Bayás, certainly a highly meritorious as well as politic measure. The Páshá is actively engaged in transporting wood from Amanus to Egypt. To accomplish this, he gives a pair of oxen to any family, more particularly preferring Christians from their steadiness, and out of the small allowance made to them for work, they have at the end of a year, if possible, to pay for the oxen.

8th.—The luggage being detained for want of horses, we went



on a-head to the house of Mr. Hayes, H.B.M., Vice-Consul at Iskenderûn. We found this little place much improved. Mr. Hayes had built himself a commodious English-looking house; the Austrian agent occupied the old consular establishment, and Ibrâhîm Pâshâ had also built granaries for rice and corn, &c. coming from Egypt. There is no doubt but that if this place is continued in the line of the Austrian steam-packets that it will very rapidly rise in importance. As it is, forty vessels, on an average, come every year to this port from Great Britain, and from fifteen to twenty from other countries. The day after our arrival, it blew one of those tremendous gales from the mountains which are so much spoken of as being frequent here; and in the evening we were only able to make our way to Beilân, where Mr. Hayes has a small summer residence, and to which we were made kindly welcome.

It is noticed by Strabo and other writers that Philotas led Alexander's horse by the Campus Alëius. Now by proceeding from Mallos to that plain, they would have crossed the Pyramus below Mopsuestia, but have been equally necessitated to pass the Ananian gates, between which and the sea is a basaltic knoll, rude although not precipitous, on the shore. I examined this particularly with the view to the possibility of the army, or any part of it, having been able to come along the shore. Hence it is quite correct to say, "Post Mallum, Ægæ sunt, oppidum cum statione, deinde Amanides portæ, cum statione." When Quintus Curtius (lib. iii. chap. 4) says, "tres asperos aditus et perangustos esse, quorum uno in Ciliciam intrandum sit," he means evidently the Gólek Bógház. Cellarius, I find, after reviewing the various testimonies, is led away by Polybius, who again founds his descriptions on the report of Callisthenes, to consider the Amanian gates of Strabo, Ptolemy, Arrian, and Quintus Curtius, as the pass over Amanus, by which Darius got to the rear of Alexander's army. Now Cellarius himself admits that Arrian in his account says, "*κατὰ sit juxta prope*," or, give the whole passage, "Darius superato monte, qui prope Pylas Amanicas est, Isson versus movit, Alexandrum imprudens a tergo relinquens." Now Polybius's language, as opposed to this correct and beautiful description, is only guess-work. "Jam Alexander, inquit, fauces et quas Ciliciæ Pylas vocant, superaverat: Darius vero per Amanidas Pylas ducto agmine in Ciliciam cum copiis pervenit." In the original it is, *Δαρεῖον δὲ χρησάμενον τῇ διὰ τῶν Ἀμανιδῶν λεγομένων Πυλῶν πορείᾳ*, etc., which conveys exactly the same impression.

Upon this occasion, without actually visiting the district, I looked carefully at the mountains, to see what opposition they would present beyond Issus to the passage of Darius' troops, and

they appeared to present several points, where few difficulties would be presented to an army without cannon. Cicero evidently led his troops into the heart of Amanus; for in his *Epist. xx. lib. v. ad Attic.*, he says he inhabited for several days the castle which Alexander had near Issus to defend himself against Darius. “*Ibi dies quinque morati, direpto et vastato Amano, inde discessimus.*” In two epistles to M. Cælius he narrates the same thing. This castle, built by Alexander, has nevertheless been confounded with Issus, which as Ἰσσοὶ existed as a great and opulent city in the time of Cyrus. See *Anabasis*, pp. 147-149.

Whether Issus and Nicopolis were two different towns, as Strabo and Ptolemy assert, or the same as is stated by Stephanus, I have no new information; but the discovery of only one ruined city on the plain of Issus would appear to confirm the latter opinion. Probably a great many contradictory opinions may be found among historians regarding the Cilician, Amanian, and Syrian gates, and it can only be hoped that a correct geography of the country will always be referred to by future commentators.

9th.—A melancholy scene presented itself to us on our arrival at Antioch, in the actual decimation of the troops then quartered there: 700 men were in the hospitals, one of which is Ibráhím Páshá's late Palace (which he is said to have sold to Mòhammed 'Alí), and the average mortality was from fifteen to twenty per day. Upon inquiry of the medical officers, they attributed it to the common fever of the country; but upon visiting the hospitals I found the symptoms and course of the disease to present quite a different face. The attacks were sudden, accompanied by giddiness and great prostration of strength: this was soon followed by a comatose state; the tongue was paralysed, and the pupil fixed; and if powerful remedies were not early administered, the attacks proved fatal in from four to eight or twelve hours. The attention of the medical officers being roused to the true nature of the malady, inquiries were immediately instituted, most minutely, into the food and drink of these poor men; nor was it long before the corn was ascertained to be largely adulterated with the seed of the *lolium temulentum*,\* well known in the East, and even noticed in Scripture, for its very fatal effects. Ibráhím Páshá sent orders to have the afflicted regiment removed to Aleppo, and for a time to be allowed perfect rest, in order to recover its strength.

The barracks built by this Páshá, from the old walls of Antioch, are still in an incomplete state. The quantity of cultivation around the town has much increased; but the prosperity within has, if anything, diminished. The old governor still held his situation,

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\* Zízán in Arabic; Zizania of the Greeks.—Ed.

but complained bitterly of the poverty of the country. Although exceedingly anxious to serve us, we were as usual detained for want of horses.

12th.—Rode in the afternoon to Jisr Ḥadīd (Iron Bridge). There is a strip of land on the banks of the Orontes, which is devoted to the cultivation of the culinary vegetables peculiar to Turkey, *bádinján* (egg-plant), *bámiyah* (*Hibiscus esculentus*), and *capsicum*. Ibráhīm Páshá has purchased this for sixty purses, or 300*l.*, and farmed it out. It probably yields more than 200*l.* a-year to its proprietor.

13th.—From Jisr Ḥadīd to Herem,\* in a direction by a single bearing, S. 65° E., but deviously by the road, is the southerly prolongation of the plain of 'Umḵ. Herem is a remarkable place, and evidently the site of a former town. It is situated at the foot of the limestone rocks of Amgólí Tágh, noticed by Mr. Thomson, from which an abundant spring issues, and is remarkable for its large mound of ruins, which rises from a still more extensive platform beneath. The situation of Gindarus, the "Acropolis Cyrrhesticæ" of Strabo (lib. xvi. p. 517), also called "Arx Cyrrhesticæ," and renowned as a resort of robbers, is well known as being now the tepeh at present called Jindarís, or Chindarís.† By most writers it is placed in Cyrrhestica; but by Ptolemy in Seleucis. Be this as it may, between it and Antioch was Gephyra (Bridge), according to the Pentengerian tables 22 miles M.P. from Antioch, and at a similar distance from the "Gendarum" of the tables. There are no ruins upon the plain of 'Umḵ at those distances; and no doubt the old road, like the modern one, whether bound from Antioch to Aleppo, or from Antioch to Gindarus, was forced to take the same line as in the present day, which will alone give the quantities required by the tables, and which at the same time demonstrates, almost beyond a doubt, the identity of Herem and Gephyra.

The Amgólí Tágh, with its culminating point, called from a tomb upon its summit, Sheïkh el Barakát, but better known to the Aleppines as Mount St. Simeon, is remarkable for the great number of villages, monasteries, and other sacred ruins, profusely scattered on its most barren rocks, or in its stony and almost inaccessible valleys. These edifices, belonging to the early ages of Christianity, are remarkable also for the architectural skill with which they are constructed, and which, in massive simplicity and correctness of style, far exceed any modern buildings in the same country. Colonel Chesney has in his possession drawings illustrative of their peculiar features, rendered still more interesting by

\* More correctly Ḥárim, pronounced Hérem.—ED.

† The Arabs have no *ch*; but the Turks, Kurds, and Persians have that sound; therefore this name would be pronounced Chindarís by the latter, but Jindarís by the Arabs.—ED.

the well-known Saint Simeon Stylites, who, according to tradition, performed his extraordinary penance amidst these rocks.

Scarcely 3 miles from Hērem, the first mines belonging to the period now mentioned are met with. They are upon the banks of a rivulet, over which was carried a goodly bridge. It was a large village, apparently with two churches : 2 miles from thence are the ruins of a church, and adjacent to it a lid of a sarcophagus, in the Byzantine style. We had remarked at Tium the body of the sarcophagus, formed of laminar rock, *in situ*. Here a tomb was also excavated in the solid rock, the lid alone being moveable. This is, however, very different from the real Byzantine tombs at 'Ainzarbeh, or the splendidly ornamented sarcophagus at Pompeiopolis.

A little beyond these ruins we began to ascend the hills. The tall houses of a former population stood prominent on the top of the hill to the right, while in our immediate vicinity were ruins apparently of a different age. These now presented only a circular mound, with successive terraces of small stones, irregularly piled, so as to form a fortification similar to those described as made by the ancient Britons. We found another of these mounds commanding a narrow pass, previous to our arrival on the plain of Dáná. They appear to be of great antiquity, and were undoubtedly meant for the defence of the road to Chalcidene and Chalybone, and which appears to have been carried along its present line long before the monks hemmed in the hewn pathway, as they appear in some places to have done, with so many begging-boxes.

Curving round this antique mound, and after a short ascent, an interesting scene presents itself,—a deep hollow in the rocks, at the bottom of which are the tall ruins of an abbey, while high up, on the opposite acclivities, is a large and inhabited cavern. Hewn reservoirs for water, of large dimensions, and having stair-cases to the bottom, occur occasionally by the road-side. They certainly indicate a most patient and laborious industry on the part of the tenants of these stony wildernesses. Passing by a ruined house of the same period, the road enters a more level valley, having a general direction of S. 55° E., and only from 200 to 300 yards in width: the remains of the ancient road are quite evident all along the centre of the valley; and near half way, there is now, and was formerly, a cross-road, which was indicated by a huge stone with an effaced inscription, which now lies in a falling condition. At the end of this vale are more ecclesiastical ruins, adorned with Ionic columns; and here the old road was hewn out of the rock: a little beyond, two rows of hermits' cells occupy both sides of the road; and passing these, the traveller enters upon the remarkable plain of Dáná, which extends to the

foot of Mount Saint Simeon on one side, and S. 35° W. from Dáná to beyond the visible horizon.

Although this plain, which is very level, is badly supplied with water, still it ever has been, and is still, remarkable for its fertility. Even in the hands of the poor peasantry that have outlived conscriptions, taxations, and levies innumerable, it still presents a most promising aspect. The chief objects of cultivation are maize, cotton, bádinján, and bámiyah. The land not being divided into small compartments, as with us, these are planted out in lines of exceeding length, which are skilfully straight and regular; and I have seen as good work done here as at a prize ploughing-match in Picardy. Dáná, which is a modern village, upon an antique site, and can show, besides two ruined churches, a very pretty little circular temple, is situated in nearly the middle of the plain; but the ruined villages of the former Christian cultivators of the soil are placed all round the plain, at its edges, and upon the usual rocks. I took bearings of no less than nine villages so circumstanced; and there are still more, as they are frequently hidden in recesses in the hills. Ibráhím Páshá lately sent some of the farmers of this plain to colonise the plain of 'Umk, and, if possible, redeem cultivable portions of that neglected country.

14/h.—Nearly 3 miles from Dáná we left the plain, and found ourselves once more upon a stony road, over low hills, or rather an undulating country of hard limestone rock, with a nearly horizontal stratification. The only possible way of making a road across this country, available for draught, would be by macadamization, and the expense would be very great, whereas the road from the Euphrates by A'záz might easily be put in order. I understand, however, that there is also a good line to the S. There were numerous ruins to our right; and we crossed a valley with an old khán and another ruined village, and then ascended to Injir Kõï (fig-tree village), where that fruit tree is cultivated in little holes in the rocks, or by piling up stones.

Passing along a rocky upland, about 2 miles from Injir Kõï, we came to more ruins, besides which others presented themselves to our view on the adjacent hills or their declivities. The road did not alter its character much until long after seeing the lofty battlements of its now ruinous castle—the great multitude of houses, churches, and minarets that belong to the famed Aleppo opened all at once upon our vision from the brow of an adjacent hill. Here, for the first time, igneous rocks succeed in the valley of the Koweik (Chalus) to the long-continued limestone, and a contrasted configuration, and a soil available to the purposes of humanity, spring from this change in the structure of the earth's crust.

15th.—We were hospitably received in the commercial house of Mr. Kilbee, but afterwards removed to that of Acting-Consul F. Werry, Esq., who did everything to assist us in recovering some of our losses at Nizib. Suleimán Páshá (Selves) had been very polite upon the occasion, and particularly requested the Europeans in the service of his highness the Páshá to give up to the British consul all papers, instruments, or books of a scientific nature which might have fallen into their possession. Mr. Werry had then recovered a few papers, chiefly duplicate copies of maps and astronomical calculations; but although we traced and heard of the local distribution of some of our instruments, we were unsuccessful, after a long delay, in obtaining them even by the offer of repayment.

There are several British mercantile houses, and much competition in the market. Goods are consequently given with little or no security, and great losses are thus sustained. It is indeed no uncommon thing in Aleppo for a native merchant or trader to obtain a certain quantity of goods on credit, and to remit the “groups” directly to England for new goods, instead of paying his original creditor. A considerable loss has lately been sustained by several houses, from an attempt made to introduce into the British market the Valonía and galls of Amanus, which proved a failure, perhaps from mere opposition. In what can these products, so abundant in Amanus, differ from the similar products of Kurdistán? Perhaps it may be answered upon the same principle as the various produce of different vineyards; but the oak, especially the Valonía,\* which is an evergreen, while the galls of commerce are furnished by deciduous species, is an obdurate and stubborn plant, not easily affected by slight causes. The commerce that is not British is of a very trifling kind, and seldom embraces the wide field of manufactures. It is much to be regretted that, since the occupation of Bíreh by the Egyptian forces, the Páshá has thought proper to put an additional tax upon each camel-load passing that great thoroughfare.

Jan. 5th, 1840.—We had several falls of snow during our stay at Aleppo; but, contrary to our hope, the cold did not last. Having set out in a fine warm afternoon, we only reached the district of Hailán, where we had much difficulty in finding a lodging: most of the houses being occupied by soldiers, we were hurried from one village to another, till we at last settled at Meherítei. This word, as Mr. Rassám remarked, is Syriac, and signifies “the two brothers:” the name of the district, Hailán, signifies “powerful,” in that language. This circumstance will assist, probably, in throwing light upon the remarkable ruins at ‘Ak Deyavín and Jinder Abá, which probably belonged to old Syrian families.

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\* *Quercus Ægilops*.—Ed.

6th.—What was frozen during the night was generally thawed by the sun during the day. We had, however, a cold piercing wind in our faces, which compelled us to dismount and walk on at a quick pace. We left a lake to our left, then crossed the Koweik (Chalus) flowing S.E., and in order to connect this country with A'záz, our former line, we went up the banks of the river, by a small village and Tell, from which we enjoyed a good prospect of A'záz, and its Tell and adjacent hills and the more distant Killis. We then turned back to the S.E. to 'Aḳ Deyavín, whither our baggage had gone direct. In attempting to cross the country our horses got so deep into the mire, that at one time we were almost in despair of being able either to proceed or to return. 'Aḳ Deyavín is remarkable for its Tell; (and in this country almost every village has its mound—Tell in Arabic, Tepeh in Turkish;) surrounded by ruinous walls built of gigantic stones, which support the declivities of the hill, and show that it is certainly a work of art. Tell Báshir, in this district, as is well known, was the site of a castle at the time when the crusaders carried their arms by Bíreh to Edessa. That some of these mounds are natural there can be no doubt; as some, also, are in part natural, and in part artificial.

7th.—We passed by Jinder Abá, where there is a Tell of trap boulders surrounded by a wall, and where the A'záz and the Aleppo roads join, to the village of Hálá O'ghlú—a station well known to Mr. Rassám and myself. The next day, *January 8th*, crossing the Sájúr, we quartered ourselves at Ékishá, a small village; whence on the ensuing day, *January 9th*, we reached Bíreh or Bíreh-jík, after a journey of 6 hours. For the last 2 days we had had much rain, and our old enemy ague had assailed both Mr. Rassám and myself. I have nothing further to remark upon what has been previously published respecting the geology of Northern Syria, than that the succession of formations at Aleppo, on the cliffs overhanging the river Koweik (Chalus) to the W., are from above below—

1. Hard, coarse, cavernous limestone, with ostracites, conides, pectinides, turritellæ, a donax and a venus. This is the formation which appears to constitute almost all the Emgólí Tágh, and which has been designated as a conide limestone; but as it here lies upon plastic clay, it probably represents the "calcaire grossier" of the Paris basin.
2. Greyish-green rock, earthy and soft; sometimes a greenish clay not fossiliferous, with veins of aluminite and talc spar.
3. Red and green thermantides.
4. Blackish-grey spilites (a coarse paste, with nodules of calcareous spar).  
Spilites and basanites.

These formations are succeeded to the E. by irregularly fissile chalk, which there contains no fossils, but occasionally flints. At Jinder Abá a rather extensive district of basanite commences, succeeding the hills of yellow fissile chalk to the N., and extending far away to the S. : to the E. it is itself succeeded by yellow chalk within about  $3\frac{1}{2}$  miles from the Sájūr (in which the conglomerates are probably a local formation), while the trap rocks form cliffs which stretch away to the S.E., above the level of the surrounding country. The diagonal line followed from Aleppo to Bírēh enables me to make these little additions to the geology of this tract, and serves further to illustrate the frequent occurrence in these countries of igneous rocks between the chalk and supra-cretaceous deposits. Bírēh was occupied by the troops of Moḥammed 'Alī, who were for the most part quartered in the mosques, while the fine old castle, a noble monument of the Macedonians, Saracens, and Crusaders, was now abandoned. The few old guns and the little ammunition, which it could boast of, had been removed to Aleppo, but many of the former were broken up on the road.

While we were at Bírēh the weather cleared up and was followed by a sharp frost, which materially improved the health of the party, so that we were enabled to continue our journey, (Sunday, *January 11th.*) when we travelled 10 hours to Chármelik, a village with huts like bee-hives, so common in the plains of Ḥarrán and Serúj, where wood being very scarce, flat roofs are superseded by ingeniously contrived spherical or dome-like coverings of sun-dried bricks. There are some villages thus constructed in Northern Syria, and they are always the dread of travellers, as they abound more in vermin than any others. There is an ancient Tell at Chármelik, besides a modern khán; and this place has been marked in the maps as the site of Anthemusia, the capital of the district so named. That site, however, is far from being satisfactorily determined.

12th.—This day we reached U'rfah, where we found Moḥammed, commonly called Ma'jún Beg, commander of the irregular troops attached to the Egyptian army in Syria, stationed with three regiments of infantry, besides a great number of irregular cavalry, who were continually employed in foraging parties in the plains of Mesopotamia—Súverek on the one side, and Rás el 'Aīn on the other, being their points of rendezvous. The time of the year, at which the battle of Nizib took place, brought the Egyptians in; for the rice-harvest of the plain of Serúj (Batnae), and of Ḥarrán (Charran), is by far the most productive in all Syria or Mesopotamia. On the plain of Serúj alone there are upwards of twenty villages whose inhabitants are employed in this branch of husbandry. The military are, as usual, distributed in the



mosques; and one of the prettiest of these, that of Ibráhím-el-Khalíl, is also sacrificed; but the sacred fish are allowed to remain unmolested. Ibráhím Páshá appears by the system now generally pursued, to wish gradually to overthrow certain Moḥammedan prejudices at their very foundation. The large barrack of the Turks alone is in part put into requisition; and the castle is shut up; so that I could not copy a Syriac inscription which I heard of in my former journey. The traveller will find in the valley N. of the castle two ponds, both full of sacred fish; that near the mosque is artificial, that near the castle, natural; and at its head there are several abundant springs of water, which in cold weather feels quite warm to the hand. Three of these, carefully examined, gave a similar and uniform result of  $+ 21^{\circ}$  centigrade ( $69\frac{3}{4}^{\circ}$  Fabr.); the atmosphere being at the time  $+ 4^{\circ}$  centigrade ( $39\frac{1}{2}^{\circ}$  Fabr.).\*

The rivulet which flows past U'rfah to the E. and N.E. is called *Qará Kóyí*; but I fear my authorities were ignorant persons. Procopius calls it Scirto, and D'Anville *Daïsan*. The latter has got, from some unknown source, most exaggerated accounts of its occasional floods: perhaps they are derived from some notice of a spring about a mile W. of the town, which is said sometimes to overflow with a roaring noise, in which the good priests of U'rfah say the miraculous handkerchief, having the impression of our Saviour's face, was lost.

Ma'jún Beg was extremely civil; wished us, while at U'rfah, to live at his expense; and, representing in a strong light the dangers of the road that lay before us, was anxious for our taking a guard of irregular horse; but at length consented to our starting with one horseman and a *cháúsh*, or officer of irregulars, by name *Hájí 'Alí*, a bedwín from Tunis, of great activity of body, and well known by his fearlessness. Besides this, we had our *tátár*, a useless old man, two servants, and two *súrújís*. This made up a goodly party; but it did not take away all anxious curiosity about the results of our journey across the "Mesopotamia Mediterranea" of Cellarius, where the roving tribes, always uncertain in their allegiance, did not now know under whose dominion they lived, while they were daily exasperated to acts of

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\* U'rfah, according to a notice in Bell's Geography, is in  $37^{\circ} 10'$  N. latitude. The mean temperature of such a parallel, according to De Humboldt, would be about  $64^{\circ}$  Fabr. At Mósul, in a lower latitude and less exposed situation, the spring of *Dámamahgáh*, "Thisbe's well," presents, from Mr. Rich's observations compared with my own, a pretty constant temperature of  $66^{\circ}$  Fabr. So that the *Ain-el-Zilghah* may be decidedly considered as having a temperature exceeding the annual temperature at U'rfah. Their preserving this high temperature during winter prevents the ponds which they supply being frozen, and is, as we first observed at the spring in *Ishik-Tágh*, in Anatolia, highly favourable to the propagation of fish.

robbery by the wholesale plunder that was committed upon them by those who called themselves their rulers.

15th.—We were only enabled, as at Aleppo, to set off in the evening; but in this country “the start” is everything; and, passing Gúrmish, a small village of Christians, we crossed a large rivulet, flowing from a glen with a village to the N., where hills of chalk abounding in flints succeeded to a district of basanite. We travelled over these roads for three hours to Kārā Tepeh, a hill with a village of from thirteen to fourteen houses and a few tents. A little beyond it is the Jáláb,\* here 30 feet wide by  $1\frac{1}{2}$  to 2 deep. According to Procopius, as quoted by D’Anville, there was a castle called Kalaba, where the Jáláb leaves the foot of the hills; and this would correspond with the position of the mound now called Kārā Tepeh in a district where the Turkish language is now seldom spoken.

16th.—Our road lay over an undulating country of horizontal limestone of the chalk formation, and we travelled in a circuitous manner, always following the valleys, which had an uncommonly deserted appearance. We fell in, however, after 2 hours’ journey, with some tents, where we sought to take a new guide and leave the one we had brought from Kārā Tepeh to return, but our Bedwíns had much to do, and plenty of blows were distributed before the stubborn Kurds could be got to move. A little beyond this place, we came upon a more open valley, towards the head of which was a large encampment: we however turned up a valley to the right: it was snowing so densely and blowing so hard, that we could scarcely see or hear one another: we had all been long anxious for a halting-place, when coming up a hill more bleak and exposed than before, our guide made a halt: he no longer knew his way, and the village he was leading us to was gone. Nothing that I could say could ward off the blows he got from the Bedwíns: there was however only one course to pursue, which was to return 2 wearisome hours to the encampment: our jaded baggage-horses tumbled at every other step; but Hájí ’Alí, with his yellow boots, was off and on his horse like a mouse, and one of our servants kept up his courage and gave quick assistance. The evening found us endeavouring to make a fire of a little damp grass; but it was of no avail, and sleep we must in our well-drenched clothes.

17th.—There was another disturbance this morning about guides. Hájí ’Alí was dealing about blows with a heavy stick, his turban having fallen and left his head bare, while his friend was using the butt-end of his gun. Several Kurd horsemen, with an

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\* Jáláb, anciently pronounced Gáláb, is identical with Kalaba.—ED.

expression of countenance that was anything but friendly, had ridden into the tent, and the Tátár was eyeing them askance, pretending to be engaged in saddling his horse. As I had previously balanced means, and knew that we could beat the whole encampment by the superiority of our arms and men, I watched the result without interfering. The Páshá's authority was ultimately recognised, and a proper mounted guide was given to us: he did not, however, prove of much use: we retraced our steps to the place whence we set out yesterday evening, and then the snow was so deep over the adjoining upland, that no trace of a path was to be found: the guide and Hájí 'Alí were active in ascending hills wherever a glance could be obtained of a new country. At length, after a tedious ride, we reached an abandoned village, from whence we obtained a view of the fertile district of Mízár, where trap-rocks, succeeding to the limestone, a sort of cultivated oasis occurs, dispersed about which are many villages of tents; in one of which, called Chabákchú,\* we found another fire made of grass, and space enough for a nap. The igneous rocks of the Mízár district extend to the Karájah Tágh, distant N.E. about 10 miles: they also occur at intervals, and occupy by far the greater part of Northern Mesopotamia, from hence to the foot of Masius near Márdín.

18th.—We travelled over a cultivated plain, covered however with large stones, 2 miles to Zibillí† village and tell: here we changed our guide, and then pursued our journey generally in a direction from S.E. to E., passing several villages and tells, among which was one called Tell Gauran (Gabr's hill), with a ruin on its summit, said to be that of a Christian church, till we came to Tell Ja'fer, where it was settled that we should pass the night: some parts of the road had been very stony and others very muddy: it was like the country near Jezíreh, and is very bad in winter: it is worthy of mention, that although snow from 6 inches to 1 foot deep covered the limestone district, the moment we came upon the basalt and basanite, none was to be seen. The outline of the country is also quite altered, and an infinite variety of low rounded hills with grassy valleys intervening, is succeeded by long sweeps of cultivated or barren soil, occasional spots being covered for miles with nothing but loose stones. This district is traversed by many rivulets, chiefly in beds having rocky sides: villages inhabited by Millis Kurds (not Turkománs, as stated in some maps) with their accompanying tells, are to be seen in every direction. To the S.E. the plain is bounded by the hills of Sinjár; to the S.W. by those of 'Abd al 'Azíz, and between the two is the very remarkable hill called Tell Kaukab (Star hill).

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\* Chibúkchí?—Ed.

† Dung-ville.—Ed.

Nearer to the N.W. are the hills just traversed, for which I could find no name. To the N.E. *Ḳarājah Tāgh*, and beyond it the rocky and snow-clad summit of *Masius*, were now distinctly visible. *Ḳarājah Tāgh* is a rocky range of conical summits of trap-rocks, running nearly N. and S. between the districts of *Súverek* and *Diyār Bekr*. Mount *Masius* commences at the flourishing and wooded village of *Derrik*, from which it first takes its name, and consists of a range of limestone hills, which terminates rather abruptly in the plain. On one of the boldest of these rocks *Márdín* is singularly perched, while beyond it, the precipices dwindle away, and are occupied by the monasteries attached to *Deiri Za'ferán*. The prolongation of these hills to the N.E. is the celebrated *Jebel Túr*. From the *Deiri Za'ferán*, low hills advance to the S., and bear the ruins of *Dará*: they then sweep round to the E. opposite *Niṣbín*. The waters of the *Jakhjakhah* (*Mygdonius*) make their way between two Christian villages, and the hills become more lofty (the *Ḳarājah Tāgh* of Mr. Forbes), bearing upon their declivities the castle of *Khalifah* (once a notorious robber of these districts), which is visible from the road to either *Jezíreh* or *Mōsul*, and gives its name to these mountains. Not far from this the limestone is succeeded by trap rock, which forms the conical hill of *Ba'arem*, and a low range which descends down to *Jezíreh ibn 'Omar*; a little to the N. of which, this last prolongation of *Masius* is only separated by the *Tigris* from the bold precipices of *Jebel Júdí*, which there form a pass well known since the days of *Xenophon*.

10th.—We went a little out of our road, although the anxiety of our guard was increasing as we approached within sight of the castle of *Márdín*, to visit the ruins of a city called by the natives *Kóhrasár* or *Koh Ḥiṣár\** (high head or castle mount). We found the ruins to be more extensive and remarkable than we had expected, and regretted that circumstances did not allow of any delay for measurement and minute examination. The walls of the city were built of good square hewn stones (basalt), like those of *Diyār-Bekr*, and were defended by square and round towers. The towers on the N. side preserve about half their original height, but on the other sides, are more ruinous: the space included within the walls is nearly square, and the extent of any one of the sides from 600 to 700 yards: the whole of this space is filled up with ruins of houses, except towards the E., where there is a large mound, apparently once a building of some extent. The houses were constructed of hewn stone with semi-circular arches and intervening masonry: many of the arches are still standing. We found no inscriptions nor Babylonian

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\* This name is probably incorrect.—ED.

bricks, but by no means explored all the ruins which cover about a mile of ground in and outside of the walls. By far the most remarkable remnant connected with the ancient place is the burial-ground without the walls, which with respect to its construction and arrangement, is the most perfect necropolis that I have ever seen: each tomb was a separate and distinct mausoleum, built of massive hewn stones, forming a chamber with three arcades, one fronting the entrance and one on each side: each of these arcades was divided into two parts, by a huge single slab of basalt, so as to contain one coffin above and one below, or six in the same sepulchre. The door itself consisted of another heavy mass of basalt, swung upon hinges cut out of the rock, and received into circular holes in the building.\* Although many of them were quite perfect, it required a man's strength to move them; and as a portal was thus left to the houses of the dead, it appears as if, as in Egypt, the inhabitants had been in the practice of visiting them; and in the interior there was space for two or three persons to walk about in: these tombs were in part underground, laid out in regular rows, of which there were about twenty, each containing nearly 100 tombs: amidst these are the more lofty ruins apparently of churches, not unlike, as are also the houses, those at Garsaura: one of these was tolerably perfect; of another the walls only rose like pillars from the plain.

It is impossible, from what we could observe, to form any satisfactory conjectures as to the antiquity of this city; but the crosses sculptured upon the portals of the tombs and the character of the churches, show that it belonged to the Lower Empire, and to a Christian community.

We had a long journey this day, passing several tells that had lost their accompanying villages, from the ruins of which we now only disturbed some grunting boars, then lost our way in a wide grassy plain, and soon afterwards our guide, who turned off, or made off to the left, while Hájí 'Alí was reconnoitring to the right; but we ultimately reached some Kurd tents, where, notwithstanding their protestations against receiving us, we persisted in quartering ourselves for the night: on the whole, the conduct of these Kurds must be looked upon as very creditable to them, more especially when it is considered that any robbery committed at the present moment is certain of a perfect immunity.

20th.—Our active Bedwíns were obliged to part from us this morning, moving off over the plains to Rás el 'Aïn, while we

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\* Lord Lindsay found tombs with somewhat similar massive stone-doors from 5 to 6 inches thick, and still moving on their hinges, at Um Káis, probably the ancient Gadara (Athenæum, No. 564). These tombs were inhabited, and my companions would have the tombs of Koh-Hīṣār or Kohrasar, to be also houses.

crossed a stream called Jahjah,\* where there are the ruins of a bridge:† we now regained the great caravan road, and after a ride of 5 hours arrived at Meskó, a stationary village, where we found some of the Sultán's irregular troops: they looked at us with wonder; but the presence of a government Tátár saved us from troublesome inquiries and examinations. At this place there is some columnar basalt or rather basanite (augitic basalt), the columns of which are twice the size of any at Staffa or Fairhead, which are themselves larger than those at the Giant's Causeway. About 2 miles from Meskó some ruins indicate the former existence of a village; another, of which the tall minarets attract the traveller's eye on the road from Mōsul to Márdín, as well as on the present road, is called Kochasár, no doubt a corruption of Kóch-Hisár, and was formerly a place of some importance. We travelled till dark, and stopped at the small village of Gurmalah, the castle of Márdín bearing N. 66° E.

21st.—On our road to Márdín we passed a valley with rivulet and olive-groves, beyond which there are two villages built on the naked limestone. This place is called Kursú or Gurusdán. I had intended not to go up the hill to Márdín, but await at Gól, a Christian village on the plain S., a little W. of the city: as, however, some delay was likely to arise from our remaining below, we trudged up that tedious ascent, and exactly one hour from leaving the plain found ourselves at the level of the lower wall of the city.

22nd.—When Turkish affairs assumed so unfavourable an aspect as they did upon the late success of the Egyptians, and the overthrow of the Sultán's armies of seven years' growth, Márdín was one of the first towns to revolt in favour of the old state of things: everything that was European was discarded; the new military dress was looked upon as the cause of all misfortunes, and the Turks to regain their wonted superiority, had nothing to do but to reassume their old clothes. Not 7 years ago Márdín underwent, from its perpetually mutinous spirit, all the rigours of a capture by the troops of Reshíd Páshá, at which time, a mine was so skilfully exploded as to destroy a number of the Sultán's troops and a jámi' or large mosque, without in any way affecting the position of the mutineers, who had fled into the castle: since that time it has been attached to the Páshá-

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\* Or Jakhjakhah. See p. 527.—ED.

† This river is a tributary to the Kaukab, if not that river itself, which may change its name near Tell Kaukab. It appears from Mr. Forbes's Memoir that all the streams flowing from the S. side of Karájah Tágh and the Márdín hills, fall into the Khábúr before the rivers of Nişibín, 'Aznawár, &c., which again unite with it before its junction with the Hólí.

lik of Diyár-Bekr; and when the Sultán's government hastened, in the midst of its difficulties, to secure its authority, by the appointment of Sa'dullah Páshá, the people of Márdín saw no alternative but that of surrendering or going over to the Páshá of Mósul. The bigoted adherence of the latter to many of the exclusive Mohammedan superstitions, had gained for him many adherents in the city of Márdín, and he was accordingly allowed to send a governor there, and a small body of troops, for which he no doubt received the thanks of the supreme government. Ibráhím Páshá will doubtless soon take possession of this town, when probably the ruins of the castle will be still further prostrated, and this unruly community will be sent to cultivate the beautiful plains that lie at its foot. In the mean time authority remains on but a ticklish foundation, and while the Egyptians are sending an agent to Dará, which gives them the command of the great road from Constantinople to Baghdád, Sa'dullah Páshá is rifling the unfortunate Derrik on account of a real or supposed correspondence with the Chieftain of U'rfah. The irregular cavalry, of which there were from 1000 to 1500 at Márdín, were constantly employed in scouring the surrounding country in pairs; but they performed their duty without spirit. Márdín, which, from barometrical observations made during my former visit, I supposed to be 3125 feet, I now think, from further consideration, not to be more than 2300 feet above the level of the sea. From the castle of Márdín, Tell Kaukab bears S. 4° E.; the Sinjár hills extend generally from S. 54° E. to S. 12° E.; and the hills of 'Abd-al-'Azíz from S. 6° W. to S. 42° W.; the road to Mósul S. 21° E. The prospect from Márdín is one of the most striking that can be well conceived, not only from the almost infinite extent of cultivated land that lies stretched out at its feet as on a map, from the numerous villages and hillocks with which they are studded and which dwindle away in the distance to a mere mole-hill, but also from the vast and almost boundless expanse of nearly level ground unbroken by trees or rivers, and for the most part sinking gradually from sight to the utmost verge of the horizon, where everything is indistinct, and here, from the great height at which the spectator is placed, so extremely remote.

23rd.—As usual on the first day we only just made a start, for when the horses were brought, every one was found to want shoeing: we were joined here by a bishop and priest of the Church of Rome, who were going to Mósul: they had been to Constantinople in order to obtain a fermán for building a church, but had only succeeded in getting authority to divide one or more of the existing Jacobite churches into two parts by a central wall, which has in one case been carried into execution since our

arrival at Mósul. We only travelled 3 hours to Harín, a village and tell.

24th.—About  $3\frac{1}{2}$  miles from Harín is Kaşr Borj, a ruin of the same age as Dárá, being part of a castle in which, according to a tradition mentioned by our companion the bishop, a son of Darius once lived:  $4\frac{1}{2}$  miles further on, we left the ruins of Dárá, with its vast granaries, remarkable tombs, and beautiful reservoirs, on our left. In front of Dárá there is another large granary still called Anbár Dárá: the river of Dárá, after flowing down into the plain, supplies the wants of a large village called Aḥmedíyah: from hence we bore away by rather a devious route to another ruin called Kaşr Serján S.  $70^{\circ}$  E. from the tell of Aḥmedíyah, from which it is about 8 miles distant. Of these ruins in the form of a parallelogram, nothing remains except the foundations and part of two octagonal towers, one of which is almost gone. In the evening we arrived at Nişibín.

After the campaign of Sinjár in 1838, Háfız Páshá attempted to renovate this very ancient city in a still fertile tract of country. A village was founded; protection, with some immunities, were offered to its inhabitants; and a jámi', with a large square building, called a kaşr, but serving as barracks, and a khán, were erected under the superintendence of Mírzá Páshá, a general of cavalry, who fell at Nizib, and was notorious in this neighbourhood for his exactions at Márdín: a large farm was also established; but all is now neglected: a few trees were planted, but it is doubtful whether they will succeed, as it is commonly believed that trees will not grow in these plains. Some new foundations had lately come to light; but I could not learn whether any antiquities had been met with in these excavations. The two tall columns of marble mentioned by Mr. Buckingham, and the church of St. James, formed from fragments of the ancient Nisibis, and containing some beautiful friezes, still remain to remind the traveller of a spot so often mentioned both in civil and ecclesiastical history.

25th.—We had some fine frosty weather; but our companion the priest could not get rid of an ague which he had caught on his journey, crossing the Mygdonius.\* We passed Antari and Latíf, small villages, and a Christian village called Dezán Dik, perched on the very summit of the Márdín Mountains (Masius) to the N. We came to Tell Jihán, where, on due consideration, it was thought advisable to stop, after a journey of only  $4\frac{1}{2}$  hours. The inhabitants were most brutal and ill-behaved, and gave us much trouble, although we had obtained a guard of four horsemen from

\* The natives call the Mygdonius Jahjah, or Jakhjakhah, as well as the second river west of Meskó.



Nişibín, and were altogether sixteen persons, our party having increased as we went along, as travellers who intend to cross Sinjár wait in the neighbourhood till others come up, that they may altogether form a considerable body.

26th.—We passed the mound and village of 'Aznowár, with a rivulet and a few trees : and one mile beyond it, is a more rapid stream, the Hassáwí of Mr. Forbes, which bounds the basaltic district, the limits of which, from Jezíreh westwards, are traced in my former narrative. The country now changes from a cultivated to a grassy plain, broken by occasional ravines and rivulets. After a ride of 7 hours, we came to Chil-aghá, two villages close to each other, where we were received by a lady who has the management of the post, and was immediately converted, by a small handkerchief, into a warm friend. We accordingly fared well at Chil-aghá, and a lamb was killed for our supper ; but our party had become so numerous, that by some strange accident it was consumed while dressing.

27th.—We now entered upon a still more desolate tract than that which we crossed the day before. Eight miles from Chil-Aghá was a tell with four tents, the inhabitants of which had been lately robbed of their flocks by some of the Sinjár people. They lived under the jurisdiction of Jezíreh, and the governor of that place had despatched 300 to 400 horsemen, whom we had seen the day before on their way, to endeavour to recover some of the lost sheep. The tell of Rumálah, as it is called, which we were now passing, is the commencement of that part of the high road to the E. which has been the scene of so many of the foul deeds committed by the followers of Khalifah on the one hand, and the tribes of Sinjár on the other ; but they were always assisted by the villagers. The country is a nearly level and uninterrupted greensward, without water, and with only here and there a tell or mound to break its uniformity. By a proper distribution of the waters descending from Masíus and the Ba'arem hills, it might however be in great part brought into cultivation, and made to maintain an industrious population, instead of the worthless vagabonds to whom it is now abandoned.

Every one of our party now began to enliven the tedium of the road by tales of robberies and murders committed at various points. The Tátár had his tale, the Súrujis theirs, and most of the travellers added to the general stock. I could not, however, help feeling a melancholy interest myself, when a mound called Chár Perú was pointed out to me as the spot where Mr. Taylor and his unfortunate companions were murdered some years ago. Such occurrences are so many indelible stains upon the government under which they occur ; for the tribes of Sinjár are not like the Bedwíns of the Desert, and might, with a little trouble

and expense, for which the government would ultimately be repaid, be kept in order.

The mound of Chár Perú, and another of larger dimensions, which we passed on this day's journey, were mere accumulations of ruins, abounding more particularly in pottery, and apparently of Saracenic or Persian origin. The second mound of ruins here noticed is called Athlán Tepeh-sí,\* and appears to have been a place of much magnificence. We slept this night by the side of a brook called Aiwánet, our party separating itself into many different groups, busily but vainly endeavouring to blow some wet rushes into a fire.

28th.—We were now approaching the Tigris, and the red sandstone and gypsum deposits on the E. side of the river formed low ranges of hills, stretching into the plains of Mesopotamia, Jebel Ghárah to the N.E., consisting of sandstone, and the more lofty Jebel Músh to the E., of gypsum; both ranges running N.W. and S.E. At the foot of Jebel Músh is a tell of the same name: on this mound there is a castle erected by Ahmed Páshá, the predecessor of Moḥammed Páshá, as governor of Mōsul. It was built with a view to keep in subjection the tribe of Arabs who dwell on the banks of Tigris, and in the vales W. of Jebel Músh, not far from the site of Eskí Mōsul. This tribe, which has for many centuries been here established, is called the Mōsulí 'Ashirat, i.e. the Mōsul-tribe.

Further onwards we came to another fort, also built by Ahmed Páshá, and called Fauḳání Maráḳa, to distinguish it from a tell at a lower level near the meeting of two brooks, called Maráḳa Suffí.† In the evening we reached Abú Marri or Abú Maryam, described by Mr. Forbes as a ruined village, near which there is a most abundant spring of brackish water, forming a small brook, which is, however, soon lost in reedy hollows. This abundant spring is a subterranean rivulet, at that time 16 feet wide and 2 deep, just issuing again from the earth. Phenomena of this kind are exceedingly common in the gypsum-district near Mōsul, where waters after sweeping along for some distance beneath the superincumbent light and porous rock, reappear in deep ravines of the same rock, perhaps again to be lost in subterranean passages, till these fall in and disclose a brook or open a valley. On this road, about 2 miles from Abú Marri, there is a remarkable subsidence of this kind; and there is another near Mōsul, where people go to shoot pigeons. This is easily understood; but there is another feature in the gypseous districts not so easy of explanation, although very frequent; it is the elevation, at the surface of the earth, of beds of gypsum, like so many semi-

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\* Tamarisk-hill.—Ed.

† Or Suffání.—Ed.

circular domes. These are sometimes small, at others larger, but seldom above a few feet in diameter, and always hollow within. When we consider that there are sulphur mines and many hot-springs impregnated with sulphureted hydrogen (hydro-sulphuric acid) near Móşul, all in the same rock, the effect of the evolution of gaseous matters immediately presents itself forcibly to the mind.

Abú Marri was now inhabited, but only by occupiers of tents; its *ķasr*, or barrack, was full of soldiers; and the residence, not of a Musellim, but of a *Zábit*, an inferior officer.

29th.—We advanced towards the eastern foot of the *Dólábíyah* hills of Abú Marri, on our left hand. After a journey of two hours and a half, we reached the ruins of a village called *Ķhatún 'Arabah-sí*;\* the Abú Marri hills being still on our left hand  $2\frac{1}{2}$  miles distant, the *Dólábíyah* hills to our right 3 miles. We had passed the ruins of *Dóláb†* or *Dólábíyah* 25 minutes before. On a plain where there were now only a few silver-leaved syngenesious plants, an ononis, and a robinia† with withered leaves, but as yet not a blade of grass or of bulbous-rooted flowers, a bright orange-coloured caterpillar had survived the sharp frost of the night. At 4h. 45m. from Abú Marri we passed *Selghât 'Arabah-sí*, another ruined village; and shortly afterwards, leaving the village of *Aĥmedát*  $\frac{1}{2}$  a mile on our left hand, we continued along gypsum hills, from whence we first obtained a view of Móşul, its remarkable, tall and falling minaret bearing S.  $85^\circ$  E. We reached the *Sinjár* gate of that city, 7 hours from the time when we left Abú Marri; but while we were allowed to enter ourselves, our baggage was ordered round to the palace, in order to be examined. Moĥammed Páshá is remarkably strict, and allows no one to enter or go out of the town without his permission; and it is next to impossible for a *ra'yah*, or native, to obtain permission to leave it altogether: at the same time, correspondence with Constantinople is as much as possible impeded. By these means the population of the city is constantly on the increase, and it may probably boast of from 40 to 45,000 inhabitants. Handsome new barracks have been erected outside of the walls near the *Tigris*; and the Arabs can no longer come and rob with impunity at the very gates. The reverses of *Nizib* were not felt at this distance; and thus, while other Páshálik is in a state of temporary depression, Móşul is more populous and more orderly than ever.

\* Lady's waggon.—En.

† Water-wheel.—Ed.

‡ This, with the *acacias* seen near *Ayás*, was probably some other leguminous plant, as neither of the genera named are indigenous in *Asia Minor*.—Ed.



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Notes of an Excursion to Ǧal'ah Sherǧát, the U'r of the Persians, and to the Ruins of Al Ḥaḍhr, the Hutra of the Chaldees, and Hatra of the Romans

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## PAPERS READ

BEFORE THE

### ROYAL GEOGRAPHICAL SOCIETY.

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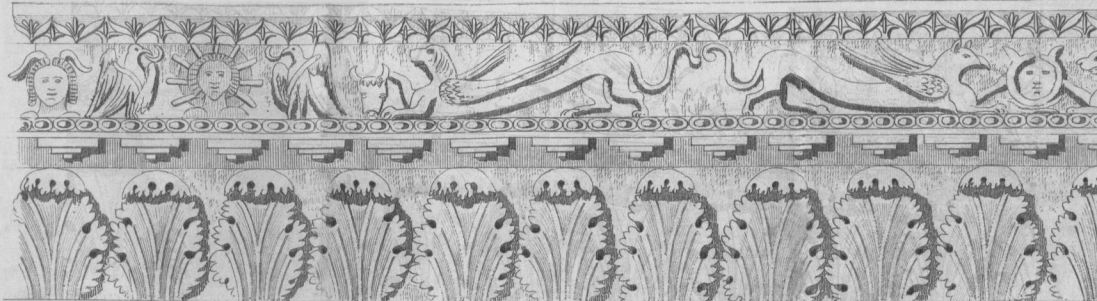
- I.—*Notes of an Excursion to Kal'ah Sherkát, the U'r of the Persians, and to the Ruins of Al Ḥadhr, the Hutra of the Chaldees, and Hatra of the Romans.* By WILLIAM AINSWORTH, Esq.

THE Royal Geographical Society has already published in its Journal an excellent account of the ruined cities which form the subject of the present memoir. But so many are the questions of site, structure, and historical revolution connected with those ruins, that descriptions given of them by a traveller beset with such difficulties as Mr. Ross (the author of the account alluded to) had to encounter from the hostility or mistrust of the Arabs, cannot be expected to satisfy curiosity, however fitted they may be to awaken it in the first instance.

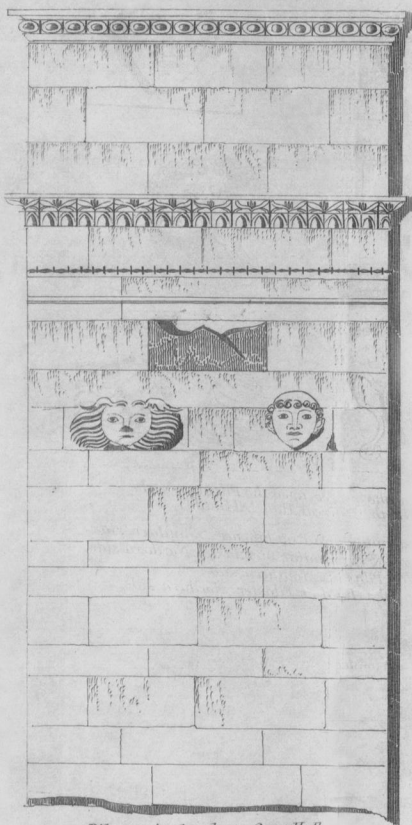
The accidental arrival of two English travellers, Messrs. Mitford and Layard, at Mósul, enabled us to make up a strong party to visit the sites in question; and the results thus obtained by a more prolonged and careful examination, added to certain inquiries into the comparative geography of these sites, will, it is hoped, prove interesting to the Society.

The party consisted of the above-mentioned gentlemen, Mr. Rassám and myself; and we were accompanied by an Arab of Tunis, of whose courage we had had proof in crossing Northern Mesopotamia, when he was in the service of Moḥammed 'Alí; but being worsted in an engagement between the Shammár Arabs (the men "without bondage") and the 'Anáidí, or irregular troops of Ibráhim Páshá, which had recently taken place near Rás al 'Ain, he had abandoned his horse to save his life, and sought refuge at Mósul. We had also with us a khaváṣṣ from Mohammed Páshá of Mósul.

We started on Saturday, April 18th, travelling at first across the cultivated alluvial plain S. of Mósul, named the Ḳarākójah. At this season of the year barley was in ear, and beans in flower; fig, almond, and mulberry trees were in full bloom, but the pis-



*Portion of a Freize above the entrance of the inner Hall of the principal building at Al Hadhr (Hatra) Mesopotamia.*



*Pilaster in Southern Great Hall  
Al Hadhr.*

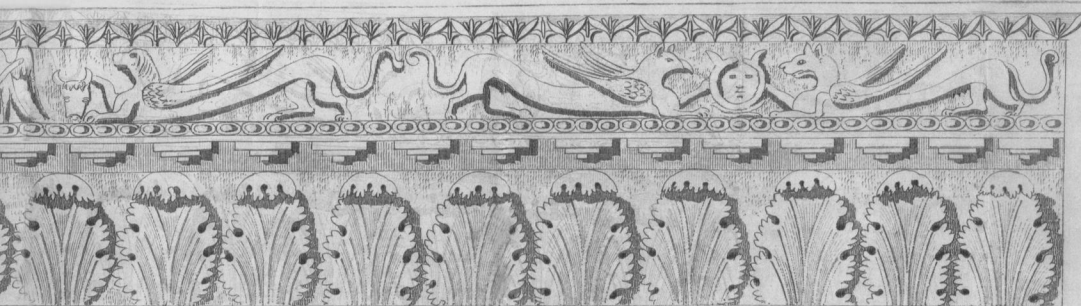


*Heads in alto-relievo upon the Pilasters in the  
Northern Great Hall. Al Hadhr.*

- 1 Only remaining head on Pilaster—Southern side.
- 2 This head & two similar on Pilaster—Northern side.
- 3, 4, 5 Heads on Pilaster—Southern side.
- 6 Only perfect head on Pilaster—Northern side.



*Ruins at Al Hadhr.*



Frieze above the entrance of the inner Hall of the principal building at Al Hadhr (Hatra), Mesopotamia.

Drawn by A.H. Layard.



Heads in alto-relievo upon the Pilasters in the Northern Great Hall, Al Hadhr.

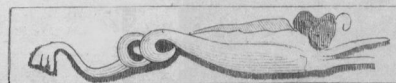
- 1 Only remaining head on Pilaster—Southern side.
- 2 This head & two similar on Pilaster—Northern side.
- 3, 4, 5 Heads on Pilaster—Southern side.
- 6 Only perfect head on Pilaster—Northern side.



Bulls in very high relief Northern Great Hall.



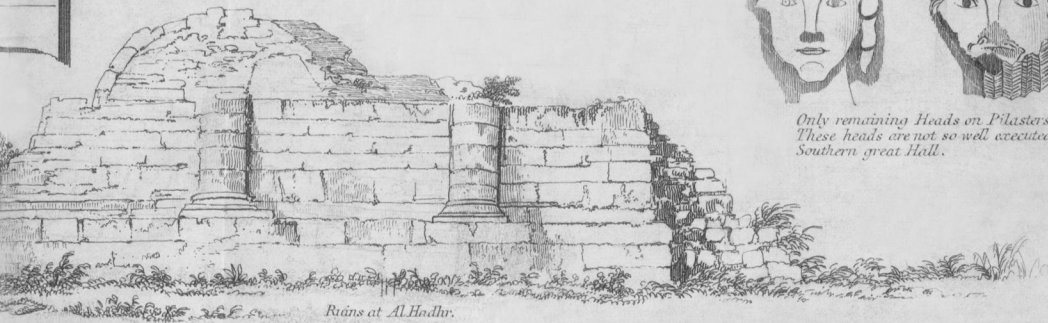
Specimen of the sculptures decorating the Arches of the lower Halls.



Ornament in alto-relievo outside centre large Hall, Al Hadhr.



Only remaining Heads on Pilasters in centre great Hall. These heads are not so well executed as those in the Southern great Hall.



Ruins at Al Hadhr.

tachio as yet only budding. On the sandy deposits of the river the water-melon had put forth its cotyledons. Doves and quails had returned a few days before from their migrations. As the river was high we were obliged to turn up the rocky uplands W. of the ruinous building designated as El Kaṣr in Lieutenant Lynch's map, but better known at Mōsul as El Seramúm, an old country residence of its Páshás. The cliffs which advance at this point over the Tigris, form the south-eastern termination of a low range of hills which stretch to the N.W., and are known as the Jubáilah, or "hilly range." They are composed of gypsum and lacustrine and marine limestones, and are from 6 to 9 miles in width. On the banks of the Tigris there is a deposit of sulphur in the gypsum of this range.

The rocky acclivities and stony valleys of the Jubáilah were now clad with a beautiful vegetation. Grass was abundant, and the green sward was chequered with red ranunculuses and composite plants of a golden-yellow hue, which enliven at this season of the year by their contrast the banks of the Tigris and the Euphrates, wherever they are stony. Crossing the Jubáilah, and leaving the village of Abú Jawári, "the father of female slaves" (the El Bujiyari of Lynch's map), to our left, we descended upon another alluvial plain, such as, on the Tigris and Euphrates, whether cultivated or covered with jungle, is equally designated Ḥáwí. The present one was cultivated, and contained the villages of 'Oreij (diminutive of A'raj, lame) and Kaḥbru-l 'Abid, "the slave's tomb." They are both inhabited by Arabs, now pasturing their flocks on the Jubáilah hills.

At the end of this plain the ground rises, and at this point are the baths and village of Hammám 'Alí; the latter inhabited by a few Chaldees, settled here by the Páshá of Mōsul to cultivate the land. The thermal spring is covered by a building, only commodious for a half savage people, yet the place is much frequented by persons of the better classes, both from Baghdád and Mōsul. The spring appears to have changed its place of exit, as a ruinous building, beneath which once issued the spring, is now 150 yards distant from it. The waters are abundant, evolving hydro-sulphurous acid, and giving off much bitumen. Their taste was vapid. The thermometer indicated a temperature of 84·6 Fahr. The spring issues from a coarse granular gypsum.

Near Hammám 'Alí is a mound about 60 feet high, called Tellul Sábiḳ, or "the mound of the victor," from a tradition of an engagement having taken place in this neighbourhood. From this Tell a range of low mounds extends about 300 yards to the S.W., where it joins another line, consisting of two rows of low mounds with an intervening fosse, and which extends in a N.W. direction as far as to the Ḥáwí. It would appear that these lines of



circumvallation encompassed a village or site of more importance than the present assemblage of poor huts.\* From Tellu-l Sábiḵ the high menárah of Mósul (Al Tewilah) bore N. 23 W.; Seramúm, N. 31 W.; monastery of Deír Sheikh Matté, on the Jebel Maḵlúb, N. 32 E.; Pyramid of Nimrúd, S. 34 E.; Kesháf, beyond the Great Zab, S. 17 E.

*Sunday, April 19th.*—Leaving Hammám 'Alí, we crossed an extensive Háví, near the centre of which is the village of Safatus, inhabited by the Arab tribe of Juḥaish, or “of the ass’s colt,” whence its name, Jeyush in Lynch’s map. We then turned off to the right to the ruined village of Jeheinah or Jehennem, “Hell or the Lower Regions,” which name excited our expectations, but we only found some old houses of a better class situate upon the side of the hills which flank the Háví to the W. Tellu-l Sábiḵ bore N. 10 E. 2 miles. Our road continued for 3 hours over verdant prairies, on an upland of gypsum, with some tracts of sandstone, when we arrived at Wádi-l Kaşab, or Reed-Valley, the banks of a sluggish stream being covered with that plant. We roused an old sow from this cover, and captured a young pig which it was obliged to leave behind. As the animal went grunting down the valley it stirred up several others with their young ones, which we hunted down, catching two more, one of which we liberated, as two were quite enough for our wants.

Leaving Wádi-l Kaşab, we approached the Tigris, a few miles below the tomb of Sultán 'Abdullah, which was the extreme point reached by the Euphrates steamer in 1839, and passing an abundant rivulet of waters which filled the air with the odour of hydro-sulphurous acid, we came to a level, naked spot, inclosed by rocks of gypsum, on the floor of which were innumerable springs of asphalt or bitumen oozing out of the soil in little circular fountains, from 6 to 9 inches in diameter, but often buried beneath or surrounded by a deep crust of indurated bitumen. These fountains cover a space of land nearly 100 yards in width, and 500 long. To the W. are some low hills, named Al Kayyárah, or the Pitch-place (whence bitumen is derived), the Tel Ghayara of Lynch’s map. These heights are continued inland in a north-westerly direction, separating Wádi-l Kaşab from the plains to the S., and rising to a height of about 500 or 600 feet, to form a cliff bounded by two cones, and called Tell al Nujm, or Star-Mound. A little beyond these pits we found other springs, giving off an equal quantity of bitumen. These are the only cases I know of springs of pure asphalt in Western Asia. The celebrated springs at Hít, and those of Dalakí in Persia, give off

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\* This place may possibly coincide with the Tisalphata of Ammianus, which name may be some corruption for a place of asphalt, just as Hit has been called Is, Izzanopolis and Eiopolis.

bitumen as a swimming product as at Ḥammám 'Alí. The fountains of asphalt on the Tigris are situate near the southern extreme of the gypsum formation, where it is succeeded by red sandstones; and their geological relations, notwithstanding the upraising of the Ḥamrín upon a similar axis to the S., are the same as those of the fountains on the Euphrates and in Persia, or nearly at the limits of a series of rock-formations, which become more and more modern from the Taurus to the alluvial plains, which latter extend farther to the N., up the valley of the Tigris, than up that of the Euphrates; whence the diagonal position of the Median wall which bounds the two formations.

Evening was coming on apace. Herds of wild boars were feeding on the Ḥáwí, and an occasional wolf stole along the hill-side, as we approached a thick jungle with the view to encamp there; but we found the banks of the river too high to water the horses. After travelling 4 or 5 miles in search of a good station, we were obliged by darkness to bring up at the foot of a tell (or mound) on the right bank of the Tigris, and below the tomb of Hájjí 'Alí, from which it bore S. 30 W.

*Monday, April 20th.*—Starting over a low range of hills of red sandstone we entered upon an extensive Ḥáwí, over which we travelled 2 hours to a red cliff, bearing S. 35 W. The banks of the Tigris were well wooded and picturesque; extensive tracts of meadow-land were bounded by green hills, and terminated in islands of several miles in length, covered with trees and brush-wood, amid which winded the rapid Tigris, in a broad and noble expanse, visible as far as the eye could reach. The quantity of large wood near it is greater than on the Euphrates, and the resources for steam navigation are very great.

Passing the cliffs of red sandstone, from which point to the Ḥamrín the Tigris follows a more easterly course, we came to a valley with a brackish rivulet, coming from the Wádí-l Aḥmer. Steep cliffs advanced beyond this to the banks of the river, and obliged us to turn inwards upon the uplands, from which we first gained a view of Kal'ah Sherkát, situate in the midst of a most beautiful meadow, well wooded, watered by a small tributary to the Tigris, washed by the noble river itself, and backed by the rocky range of the Jebel Khánúkah, now covered with broad and deep shadows. In 3 hours' time we arrived at the foot of this extensive and lofty mound, where we took up our station on the northern side, immediately below the central ruin, and on the banks of a ditch formed by the recoil of the Tigris.

Although familiar with the great Babylonian and Chaldean mounds of Birs Nimrúd, Mujallibah and Orchoe, the appearance of the mass of construction now before us filled me with wonder. On the plain of Babylonia to build a hill has a mean-

ing; but there was a strange adherence to an antique custom, in thus piling brick upon brick, without regard to the cost and value of labour, where hills innumerable and equally good and elevated sites were easily to be found. Although in places reposing upon solid rock (red and brown sandstones), still almost the entire depth of the mound, which was in parts upwards of 60 feet high, and at this side 909 yards in extent, was built up of sun-burnt bricks, like the 'Aker Kûf and the Mujallibah, only without intervening layers of reeds. On the side of these lofty artificial cliffs numerous hawks and crows nestled in security, while at their base was a deep sloping declivity of crumbled materials. On this northern face, which is the most perfect as well as the highest, there occurs at one point the remains of a wall built with large square-cut stones, levelled and fitted to one another with the utmost nicety, and bevelled upon the faces, as in many Saracenic structures; the top stones were also cut away as in steps. Mr. Ross deemed this to be part of the still remaining perfect front, which was also the opinion of some of the travellers now present; but so great is the difference between the style of an Assyrian mound of burnt bricks and this partial facing of hewn stone that it is difficult to conceive that it belonged to the same period, and if carried along the whole front of the mound, some remains of it would be found in the detritus at the base of the cliff, which was not the case. At the same time its position gave to it more the appearance of a facing, whether contemporary with the mound or subsequent to it I shall not attempt to decide, than of a castle, if any castle or other edifice was ever erected here by the Moham-medans, whose style it so greatly resembles. On the same side we visited the subterranean passage noticed by Mr. Ross; and Mr. Mitford found there the head of a small urn.

Our researches were first directed towards the mound itself. We found its form to be that of an irregular triangle, measuring from the S. to the N. E. point, along the side which is washed by the river, 1727 yards; along the N. side, extending from N. 72 E. to S. 72 W., 909 yards. The mound then strikes off in a nearly straight line 400 yards to the S. 38 W.; afterwards curving round to the S. point, a distance of 1750 yards, making a total circumference of 4685 yards; whereas the Mujallibah, the supposed tower of Babel, is only 737 yards in circumference; the great mound of Borsippa, known as the Bîrs Nimrûd, 762 yards; the Kaşr, or terraced palace of Nebuchadnezzar, 2100 yards; and the mound called Kôyunjûk, at Nineveh, 2563 yards. But it is to be remarked of this Assyrian ruin on the Tigris, that it is not entirely a raised mound of sun-burnt bricks; on the contrary, several sections of its central portions displayed the ordinary pebbly deposit of the river, a common

alluvium; and where swept by the Tigris, the mound appeared to be chiefly a mass of rubble and ruins, in which bricks, pottery and fragments of sepulchral urns lay embedded in humus, or alternated with blocks of gypsum; finally, at the southern extremity, the mound sinks down nearly to the level of the plain. The side facing the river displayed to us some curious structures, which, not being noticed by Mr. Ross, have been probably laid bare by floods subsequent to his visit. They consisted of four round towers, built of burnt bricks, which were 9 inches deep, and 13 inches in width outwards, but only 10 inches inwards, so as to adapt them for being built in a circle. These towers were 4 feet 10 inches in diameter, well built, and as fresh looking as if of yesterday. Their use is altogether a matter of conjecture: they were not strong enough to have formed buttresses against the river; nor were they connected by a wall. The general opinion appeared to be in favour of hydraulic purposes, either as wells or pumps, communicating with the Tigris.

The south-western rampart displays occasionally the remains of a wall constructed of hewn blocks of gypsum, and it is every where bounded by a ditch which, like the rampart, encircles the whole ruins, so that we did not feel justified in separating, as Mr. Ross has done, the southern portion of the town from the more elevated part.

All over this great surface we found traces of foundations of stone edifices, with abundance of bricks and pottery, as observed before us, and to which we may add, bricks vitrified with bitumen, as are found at Rahábah, Babylon, and other ruins of the same epoch; bricks with impressions of straws, &c., sun-dried, burnt, and vitrified; and painted pottery with colours still very perfect; but after 2 hours' unsuccessful search by Messrs. Mitford, Layard and myself, Mr. Rassám was the first to pick up a brick close to our station, on which were well-defined and indubitable arrow-headed characters.

The little mound which crowns the greater one is crumbling to pieces. We found it to be 218 yards round the base, 314 yards round the wall of gypsum, which in part incloses it, and about 40 feet in height. This mound is situate near the centre of the northern side, and is separated by a water-worn ravine from another pile of ruins upon which are some Arab graves. Further than these few facts, neither our researches nor those of Mr. Ross furnish anything remarkable.

By the character of its remains as well as by position, the ruin of Kal'ah Sherkát is associated with the Assyrian cities of Nineveh, and of Nimrúd or Resen, the Larissa of Xenophon, at the junction of the Tigris and the Great Zab. Ammianus Marcellinus is the only authority who notices in the same neighbourhood

U'r, a site, as its name would indicate, of great antiquity, and which has by Rennell and others been identified with Al Hadhr; but Ammianus, who calls it a castle of the Persians, describes it as at some distance from that place. Cellarius (*Notitia Orbis Antiqui*, tom. ii., p. 737), speaking of Ammianus, says: "Addit superiori Mesopotamiæ castellum Ur, inter Tigrim et Nisibin positum quod nonnulli Ur Chaldæorum credunt esse." Afterwards the same author continues: "*Deinde* Hatram, vetus oppidum, in media positum solitudine, itidem inter *superiorem* Tigrim et Nisibin." Hatra is here brought in after Ur by a severe critic, and it is placed between Nišibín and the *Upper* Tigris, while no such distinction is established for U'r. There is also another passage in Cellarius (p. 729), where, quoting Ammianus, he says: "Quum centesimo circiter lapide a Corduena provincia et Armeniæ finibus Tigrim trajecissit et sex diebus per solitudinem in quâ Hatra sita erat, iter fecisset, ad Ur nomine Persicum castellum venisse." This rather implies a journey of 6 days from the time the army passed the Tigris, travelling along the banks of the river, which they must have adhered to for water, and through the deserts in which Hatra was situated, than through Hatra itself. Ammianus himself says: "Properantes itineribus magis *prope* Hatram venimus." Near Hatra, and not at it—a view of the subject which is supported by his going from U'r to Tisalphata, and thence to Nišibín, if Tisalphata was on the Tigris, as there appears every reason to believe.

The position of the U'r of the Persians considered as the same as the U'r of the Chaldeans, with regard to Harrán, answers as well to the descriptions of the journeyings of Abraham given by the inspired writers and profane historians as the modern 'Urfah, if not indeed better. "And they went forth from Ur of the Chaldees to go into Haran and dwelt there," would scarcely have been said if Abraham and his family had only removed a few hours from 'Urfah to Harrán. The learned Spanheim, in his *History of Job*, describes Harrán as upon the road from U'r of the Chaldeans into Palestine, going from E. to W.; and yet identifies the U'r of the Chaldeans in the time of Abraham with the U'r of the Chaldeans of the Chaldæo-Babylonian dynasty, the Urchoe or Orchoe of Ptolemy and Pliny. Bochart and others, according to Cellarius, have sought to identify the country of Abraham with the Ur of the Persians, but they have supposed it to be beyond Hatra, which is decidedly not the deduction to be made from the words of Ammianus. In any attempt to identify the U'r of the Persians, now called Ḳal'ah Sherḳát, with the U'r of the Chaldeans, there is only, till farther evidence can be obtained, the character of the remains, and the narrative of the historian of Jovian's retreat, to be placed in opposition to the

testimony of certain Oriental historians (see my "Researches in Assyria," &c., p. 153) in favour of the identity of U'r of the Chaldeans with 'Urfah, and the existing traditions which have consecrated that city as the birth-place of the father of Isaac.

The sentiment by which animals that are very low in the scale of organization are attracted by light and heat is a simple physiological phenomenon, their nervous system, as in the medusa, being influenced directly by external agents; but it is more curious in creatures in which there exists a ganglionic cerebral system. This evening a young snake found his way into the fire, although we were sitting round it; and at Al Ḥadhr the same thing occurred with regard to a scorpion, while hundreds of coleopterous insects kept wandering round the verge of the ashes. After dark the frogs of the ḥawī mingled their croaking with the whoop of night birds and the howl of jackals, while thirsty musquitoes hummed in our ears; but putting out the fire in order to distinguish the horses better during the night, we disregarded the melody around and about us, and slept in security in our cloaks till the earliest dawn.

*Tuesday, April 21st.*—Our khavāṣṣ this morning, seeing that we were about to penetrate the wilderness without a guide, took the pretence of his horse having lost a shoe to withdraw himself from the party, and to return by the river banks to Mōsul. On leaving Kal'ah Sherkāṭ we kept a little to the S. of Wādī el Meheih, in which there was now no running water, in order to avoid retracing our steps to the S., as Mr. Ross had done. We travelled at a quick pace over a continuous prairie of grasses and flowering plants, and crossing the 'Ain el Tha'leb, having still a little stagnant water, we arrived at a ridge of rocks which rose above the surrounding country, and were constituted of coarse marine limestones. From a mound, upon which were a few graves, we obtained a comprehensive view of that part of Mesopotamia which extended to the W., but without being able to distinguish the valley of the Tharthar or the ruins of Al Ḥadhr. The country near us undulated much, and to the S.W. the Ḥamrīn hills terminated in a long but not very elevated range, upon which was a cone called El Kaṭr, which forms the westerly termination of the Ḥamrīn; and as we afterwards found, advanced over the valley of the Tharthar. Mr. Ross has noticed this fact also; and it is of importance, as Mr. J. Arrowsmith and other geographers have traced across Mesopotamia a continuation of the Ḥamrīn hills as far as this 'Abd al 'Aziz. The Ḥamrīn are formed of tertiary red sandstones, gypsum, and conglomerates; and the 'Abd al 'Aziz, as far as I am yet acquainted with them, of chalk and superincumbent limestones.

Opinions as to the probable position of Al Ḥadhr were in

favour of some mounds which were visible in the extreme distance to the S.  $95^{\circ}$  W., and having great faith in the eyes of our Bedwîn, who also took this view of the subject, we started in that direction. although the compass indicated a more northerly course. After  $2\frac{1}{4}$  hours' quick travelling, still over prairies and undulating country, we came to the supposed ruins, which turned out to be bare hills of sandstone, the southern termination of a low ridge. Although pestered by sand-flies, we stopped a few moments and breakfasted on bread and wild leeks (*Allium roseum*), which are abundant every where, and frequently enamel with their roseate and clustered umbels the lichen-clad space that intervened between the dark-green bushes of wormwood. From this point the tell with graves bore N.  $75^{\circ}$  E., and El Kaṭr S.  $50^{\circ}$  W.

Changing our route, we started to the N.  $25^{\circ}$  W., in which direction we arrived, after  $1\frac{1}{4}$  hour's ride, at a valley bounded in places by rock terraces of gypsum, which indicated a wādī and a winter torrent, or actual water. To our joy we found the Tharthar flowing along the bottom of this vale, but only from 15 to 20 feet in width instead of the 50 we had been led to expect; and to our great comfort the waters were very potable. The stream though narrow was deep, generally from 5 to 7 feet, and hence with difficulty fordable; on its banks were a few reeds and scattered bushes of tamarisc. We proceeded up the stream in a direction N.  $10^{\circ}$  W. in search of a ford, which we found after 1 hour's slow and irregular journey, and we lost  $\frac{1}{2}$  an hour refreshing ourselves with a bath. We afterwards followed the right bank of the stream, being unwilling, as evening was coming on, to separate ourselves, unless we actually saw Al Ḥaḍhr, from the water so necessary for ourselves and horses. The river soon came from a more westerly direction, flowing through a valley every where clad with a luxuriant vegetation of grasses, sometimes nearly  $\frac{1}{2}$  a mile in width, at others only 300 or 400 yards, and again still more narrowed occasionally by terraces of gypsum. This rock was very cavernous, and furnished from its recesses many subterranean springs. At one place we observed a part of the waters of the Tharthar absorbed by a fissure in the rock. The gypsum is also observed at some points to rest upon red sandstones, which here present chloritous beds. We stopped 1 hour before sunset in order to have time to collect wood before dark, and dined upon rock partridges (*perdix petrosa*) killed at Kal'ah Sherkāṭ.

*Wednesday, April 22nd.*—Rain overtook us in our sleep, which was otherwise unbroken even by dreams of Arabs, still less by their presence; indeed we had been hitherto as quiet as if travelling on the downs of Sussex. After holding a short consultation over Mr. Ross's memoir, we deemed it best to keep on

up the river, but to travel a little inwards on the heights. This plan was attended with perfect success; and we had ridden only  $1\frac{1}{2}$  hour, when we perceived through the misty rain mounds still to the N.W., which we felt convinced were the sought-for ruins. Mr. Rassám and myself hurried on, but soon afterwards, perceiving a flock of sheep in the distance, we became aware of the presence of Arabs, who could be no other than the Shammár, so we waited for our friends and rode all together into the kind of hollow in which Al Ḥadhr is situated. Here we perceived the tents of the Bedwins extending far and wide within the ruins and without the walls to the S.W. The ruins themselves presented a magnificent appearance, and the distance at which the tall bastions appeared to rise, as if by enchantment, out of the wilderness, excited our surprise. Comparing the feelings expressed by Mr. Ross, on first seeing these ruins, with the drawings engraved by the Society, we had before smiled involuntarily, but we now entered fully into that gentleman's sentiments and were filled with a similar sense of wonder and admiration; no doubt in great part due not only to the splendour of the ruins, but also to the strange place where the traveller meets with them—"in mediâ solitudine," as Ammianus so briefly but so correctly expresses it.

Inquiring of a shepherd for the tent of the sheïkh, which we soon afterwards distinguished by its two spears, we rode directly up to it, and in a few minutes found ourselves seated by a spare camel-dung-fire, and surrounded by members of the Lamúd branch of the Shammár Arabs. Happily for us there was at this moment in the encampment an Arab of Mósul who recognised Mr. Rassám, and the reception given to us was at once hospitable and tolerably frank. The finding Arabs here is indeed what may generally be relied upon by any traveller in search of these ruins. The number of halting-places which present what is actually necessary for the Arab, water and grass, are not so numerous in the plains of Mesopotamia and Arabia as are generally imagined. Hence the reason of their changing localities; and hence the traveller may almost be as sure of meeting Arabs at Palmyra as at Al Ḥadhr. For the same reason that cities were built on these oases in the wilderness, the wandering Arab now resorts to situations where there are waters, and with them pasturage. To M. de Lamartine's work on the East, there is appended a very valuable memoir, purporting to be an account of the residence of Fat-h-Allah Şeghîr amongst the wandering Arabs of the great desert. There are a number of facts which convince me of the authenticity of this document, but I shall content myself with noticing what refers to Al Ḥadhr. Leaving Nain el Raz, evidently meant for Rás al 'Aïn, the party which



the narrator accompanied pitched their tents on the banks of the Khábúr, from whence they proceeded to the mountains of Sangiár (Sinjár): they then drew towards what the writer designates a river, or rather arm of the Euphrates, which joins the Tigris. This is evidently an error founded upon the mysterious origin of the Tharthar. He then describes the enormous trays used by the Bedwíns of Mesopotamia, and of which a specimen was measured by Mr. Ross. The Arabs proceeded from the Tharthar to the territory of Atterié, near the ruins of the castle of Attera (Hadhhr), where they encamped for eight days, the pasturage being very abundant. The course here followed by the Arabs is in every respect the same as that pursued every year by the Shammár, in their migrations to and from their winter quarters on the plains of Seleucia to their summer quarters on the Khábúr and in the Sinjár.

At the present moment, Sufúk, the chief of all the Shammár, was, with a large body of horsemen, at Rás al 'Ain, from which he had driven the 'Anáidí of Ibráhím Páshá, while the main body of the tribes remained part on the Khábúr and part near the Sinjár, where they were also at enmity with the Yezídís. Having breakfasted upon newly made bread and fresh butter, the latter a luxury not to be obtained at Mósul, we made our first visit to the ruins, during which some of the Arabs gave us much annoyance by their rudely anxious and-almost imperious inquiries as to the exact spot where the money was, which, as in our predecessor's case, they felt quite certain we had come to seek for. At length, having returned to the tent, Mr. Rassám addressed them upon the folly of the ideas which they entertained regarding finding treasures, and endeavoured to explain the real object of our researches, in which he was backed by the sheikh and the merchant, and we were left the remainder of the day among the ruins pretty well to ourselves—a circumstance which, however, was also in great part owing to a rumour which got abroad that an army was following in our steps, and in consequence of which the tribe judged it convenient to take their immediate departure without sound of drum or trumpet; and, three hours after our arrival, there were only the tent of the sheikh and a small one near it remaining of the whole encampment.

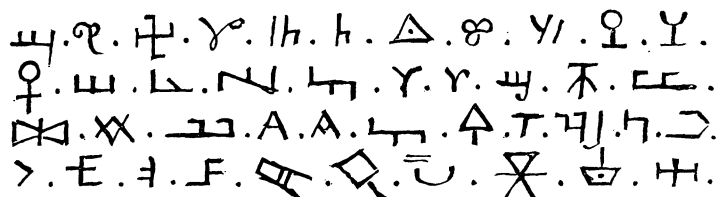
The ruins of Al Hadhr present the remains of a principal building which apparently was at once a palace and a temple, and which surpasses in extent and in the perfection of its style the ruin known as the Táki Kesra, or Arch of Chosroes at Ctesiphon, and which was the residence of the kings of Persia of the Arsacidan dynasty. It consisted of a series of vaulted chambers or halls, of different sizes, all opening to the east, or towards the rising sun and planets, and regularly succeeding one another from north to south,

and was divided into two parts by a wall; while in front was another row of edifices, guard-houses, &c., at the southern end of which was a great hall, with ornamented vault and tall columns, similar to what is observed in the chief edifice. The whole of these buildings were enclosed within a wall about 1360 yards square, which left a considerable space open in front, and this open square was in the exact centre of the town, which, as figured in Mr. Ross's map, is nearly a perfect circle, surrounded by a rampart, about 3 miles 180 yards in circumference. Portions of the curtain, which was 10 feet 3 inches in width, still remain on this rampart; and there are also the ruins of 32 bastions, placed at unequal intervals, and not, as Mr. Ross supposed, every 60 paces. The space occupied by the town still contains the ruins of tombs and other edifices, and is everywhere covered by mounds of ruined buildings. There is also a spring, and a channel for water, not straight but tortuous, which crosses the town: and there were apparently four gates, having straight and paved roads leading from them to the central edifice.

The whole of the buildings are constructed of a coarse granular limestone, abounding with marine shells, more especially *ostracites* and *anomia*, apparently, for the most part, recent species. There is a tradition preserved at Mósul, that the stones for the construction of Al Ḥaḍhr were brought from Sinjár, where I hope on a future occasion to seek for this formation. The stones have been hewn with skill, and are well adjusted.

Every stone, not only in the chief building but in the walls and bastions, and other public monuments, when not defaced by time, is marked with a character, which is, for the most part, either a Chaldaic letter or numeral. But some of them could not be deciphered either by Mr. Rassám or by a Jewish Rabbi of Jerusalem, whom we consulted at Mósul; for it is necessary to remark that the Chaldeans, or Chaldees, since their conversion to Christianity, have uniformly adopted the Syriac letters which were used by the apostles and fathers of the church, regarding the pagan writing (or Tergúm, as they call it) as an abomination. The Jews, however, who learnt it in their captivity, have retained, except in their Talmud, and some other works written in the Hebrew character, the use of Chaldean letters. Some of the letters at Al Ḥaḍhr resembled the Roman A, and others were apparently astronomical signs, among which were very common the ancient mirror and handle ☿, emblematic of Venus, the Mylitta of the Assyrians, and Alitta of the Arabians, according to Herodotus; and the Nání (Hyde, p. 92), or Nannaia (Rawlinson, *Journal of R. G. S.*, ix. p. 43), of the Syrians. Mr. Ross makes a mistake, which it is important to correct, when he says that these letters are only seen in the midst of broken walls where they

could not have been exposed when the structure was perfect. It is quite evident, from the prominent situation which they occupy in the interior of the great halls and sanctuaries, that their object was much more important than a mere arrangement of the stones. The characters alone indicate their antiquity; and, as to their use, they appear to have a distant relation to practices carried to a further extent by the Assyrians and Babylonians, and by the Egyptians. In whatever obscurity the meaning of these signs or letters may be now involved, they still possess great interest to the archæologist, as proving the Chaldean origin of the buildings in question.\*



In the details of the various architecture presenting itself to the inquirer at Al Ḥadhr there is much which claims a brief notice. Mr. Ross has described the compartments of the chief building, numbering them from S. to N., and we will follow the same plan in the few remarks there remain to be made in addition to what that gentleman has observed.

The most southerly hall is No. 1, which is a small hall, 9 yards deep by 6 in width: it has externally every stone in the arch sculptured, in high relief, with a human bust, some of which, as Mr. Ross remarks, have very singular curling bag-wigs, or, more probably, a peculiar mode of dressing hair, which we know to be common in Persian sculptures, but those, I believe, only of a modern date, or more particularly of the time of the Sasanian dynasty. Mr. Layard, however, stated that he had seen head-dresses of a similar character at Ba'lbek, and which were Roman. They were probably connected with a form of worship introduced from Persia into Emesa and Heliopolis, and from thence carried, by the pretended son of Caracalla (Heliogabalus), to Rome.

The second hall is of greater dimensions, being 31 yards long by 14 wide, and 20 yards high. The figures on the arch were those of angels, or females apparently in the air, with feet crossed and robes flying loose; while in the interior, on both sides of the hall, were three square pilasters, surmounted by full round faces, 2 feet 2 inches high, by 1 foot 8 or 10 inches broad, in high relief, and executed with considerable fidelity and spirit. Mr.

\* The letters were generally about one or two inches in size, and carefully sculptured, one in the centre of the face of each stone.

Layard has enabled me to forward to the Society, drawings of the most remarkable faces remaining in this and the other halls.

While the style of these sculptures appears to be pretty nearly uniform, it is impossible not to recognise costumes differing much from one another. Indeed, it requires but little imagination to figure to oneself in these sculptures the representations of the successive powers who ruled the City of the Desert. The simple turban-like head-dress represents the Chaldean; the bearded physiognomy and scattered hair, the Persian satrap; the laurel-leaved band, supporting eagle's wings, the Roman; while the binding round the head, like a double fold of rope, as it is also described by Mr. Ross, appears the original of the present Arab head-dress. It may be advanced against this view of the subject, that if the building is all of one style, this style must also be carried through all its details, and that we cannot expect that any of the decorations can be illustrative of different periods; but there is no reason why, if the Parthians or Persians borrowed their style from the Romans, they still might not have introduced their own sculpture, as at Persepolis: or, if the Romans built the great monument of Al Ḥaḍhr, they might equally have been influenced by a conquered people to introduce, as well as letters, forms sacred to their religion, or gratifying to their pride and to their national reminiscences.

On the face of the wall of this great compartment, besides the signs before mentioned, are two inscriptions, one in Chaldaic, the other in Arabic, both cut in the stones, but which run along from one to another, and are evidently more modern than the building. The first, translated by a Jewish Rabbi, appears to be the lament of some Jews of the captivity; for ancient Chaldeans would scarcely use the language of David: "In justice to thee who art our salvation, I hope from thee, O God, for help against mine enemies." The general opinion among the Jews is in favour of this inscription having been written during the captivity. The Rabbis cannot decipher the signs of older date; some are Chaldean numerals, others they consider to be astronomical signs, not a few appear to be Parthian or Armenian. The Arabic inscription was copied and translated by Mr. Rassām; its purport is as follows:—"Mes'ūd Ibn Maūdūd Ibn Tamankī, the just king, protector of religion, and defender of the faith, in humble service, and seeking mercy from his Lord, caused this to be repaired in the year of the Hījah 586" (A.D. 1190). It is remarkable that the name inscribed here\* is the same as that we met with at Sultān Khān, in Kōj-ḥisār, and is that of a king whom I have described in a former memoir as having established a great road

\* 'Azzu-d-dīn, Mes'ūd ibn Maūdūd, Atābek of Irāk, who reigned at Mōsul from A.H. 576 to 589 (A.D. 1180—1193).—ED.

from Baghdád through Asia Minor. It here apparently followed the same line as that used by the Greeks and Romans—Seleucia, Sitace, Ur, Hatra, Tisalphata, Nisibis; in the time of the Khalifs, Baghdád, Sheri'at el Beïdhá (Sitace), Aḳbará on the Babilín (Opis\*), Samarraḥ, Tekrít, Kal'ah Sherkát, Al Ḥadhr. It is remarkable that Ptolemy, in enumerating the sites upon the Tigris, after noticing Derbeta (Diyár-bekr), Saphe (Ḥiṣn Keífá), and Deba (Bezábdeh Jezíreh), starts off by Sinjár to Batnæ (Betuna) and Birtha (Bír), which has misled even Cellarius.

With the assistance of lights we examined the subterranean rooms connected with the first great hall, but did not find anything of interest.

In the rear of the same great hall is another compartment, surrounded by a lofty vaulted passage, 96 yards round. From its beautifully ornamented doorway, and complete seclusion from the other parts of the edifice, it may be conjectured to have been a religious sanctuary. Over the doorway is the most beautifully sculptured relief in the whole building; it represents griffons supporting heads, human and others, and in the centre is the head of Apollo, or Mithra, supported by eagles with scrolls in their mouths; beneath is some beautifully sculptured foliage. Mr. Layard has furnished a drawing of a portion of this frieze. It is evidently of Roman execution. M. Texier, who passed through Mósul shortly after our return, gave his opinion also to that effect. It would appear as if the Romans had contributed to adorn a temple consecrated to the worship of a deity in whom they recognised their own Apollo, adding the Roman eagles to the insignia of Mithra, who was the same as the Bel of the Chaldeans.

At the first small hall of the northern division (No. 4), the sculptures over the arch of the entrance are among the most perfect of the out-of-door sculptures. They appear to be alternations of male and female heads, the first having the peculiar head-dress noticed in No. 1, while the latter present a remarkable similarity to the present style of dress in Western Europe. Some of the ladies have dresses like corsets, terminating in a point. The bust is neatly and only partially displayed. Most of them wear tiaras of jewels, some have necklaces. The hair falls on the shoulders of some in a profusion of ringlets, in others is trimmed up in large curls, and again in some puffed out behind, as was once the case at the French court. On the wall between Nos. 4 and 5 is the sculpture of a monstrous animal, of which I send a copy by Mr. Layard.

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\* If Aḳbará was, in the time of the Khalifs, as we know from the Oriental geographers, upon the present Old Tigris, how much more likely is it that Opis, which was anterior to Aḳbará, was there also, than at the present junction of the Physcus and Tigris, where Lieut. Lynch has placed it in his map!

The walls were measured in all their details of bastions, &c., and were found to be 5460 yards round, which, as the space was paced and not measured off, can only be an approximation; but which comes remarkably near to the amount in yards of the Persian farsakh, the Jewish parsah, and the Greek parasang, if (as Major Jervis has done after Jomard and others) we assume that to be an integral portion of the earth's meridional circumference, or the eight-thousandth part, which computed to the ellipticity  $\frac{1}{305}$ , will be equal to 5468·668 yards English. The exactness of the forms observed in the construction of Al Ḥadhr—a square within a circle and in its exact centre—certainly point out that a system was observed in its construction; and it is a striking corroboration of the facts observed of the circumference, that the sides of the inner square are 340 or 341 yards in length, or the  $\frac{1}{11}$ th of the circumference of which the whole square is at or near  $\frac{1}{4}$ th. Had all the admeasurements been taken with care, probably a similar system would have been found to pervade the whole of the details.\*

Within the circuit of the walls were many ruins of doubtful character. It could only be the result of a very hasty examination which would confine the dwelling-houses merely to the western part of the city, and assign to the eastern a continuous necropolis. Some of these buildings are square, and they are of different sizes. I transmit a sketch of one ornamented with pillars, which had two interior vaulted chambers with an outer vaulted hall, and a stair leading to the top as if to sleep upon it, as is the custom at Mōsul and Baghdād. The openings to let in light are more like loopholes than windows, but this may have been for coolness and from want of glass, as is observed in the cottages of the peasants in the East. A large square building, with one vaulted chamber, which appears to have been a small temple or mausoleum, occurs on the northern side. It is built upon a handsome basement, with a projecting but simple cornice. I ought not to omit to mention that the pear-shaped cavities common in Syria are also met with amid the ruins here.

It only remains for me to make one or two observations upon the history of this remarkable city.

It is evident from the character of the letters or signs inscribed on the hewn stones, that whatever style was adopted as a pattern or for imitation, or whoever were the architects employed in the construction, that the chief persons in the city were Chaldeans or Chaldees.

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\* In laying down the plan I find I have also two admeasurements taken, one from the S.W. corner of the inner wall to the outer wall, and the other from the N.W. corner to the outer wall; these give, one 625, the other 620 yards, an excess over the probably real distance of 615, which might result from the inequalities of the soil. I have consequently adopted the theoretic distance in the plan as most correct.

Modern historians (Heeren, Manual, &c., vol. i. p. 38) admit the existence of the Chaldeans as a northern nation anterior to the foundation of the Chaldæo-Babylonian dynasty. No monuments of this very ancient people have as yet, however, been discovered, which can be ascertained to belong to a period anterior to the Babylonian conquest; and it appears from the few cities supposed to have belonged to them, and of which remains are extant, as Orchoe and Borsippa, that they constructed huge mounds or lofty temples to their deity Bel, in the same manner as the Babylonians. But some latitude must be allowed to this statement in the north; for although there is every reason to believe that U'rfah was one of the U'rs of the Chaldees, yet no remnants of this kind are there met with, and were it not that we find that custom preserved where there are rocks and stones for building, as at Kal'ah Sherkât, one would have felt inclined to confine it to the country for which it was best suited, and where it sprang partly from necessity. From what is known of the ancient style of the Chaldeans, as well as from the peculiarities observed in the construction of the monuments now to be seen at Al Hadhr, there is every reason for believing that city to be of a comparatively recent date.

The first period when Al Hadhr comes under the notice of history is at the time of the conquest of Trajan, who first reduced Mesopotamia into a Roman province. The fragments of Dion Cassius, preserved by Xiphilinus, notice the people of Al Hadhr as Ἀγαρηνοί, which, as Valesius pointed out, should be Ἀτρηνοί. For Dion, relating the campaign of Severus, writes τὰ Ἀτρα, and Herodianus (iii. cap. ix.) αἱ Ἀτραί. Ammianus writes it Hatra, as does also Cellarius. The Peutingerian tables, almost always in error, call it Hatris. Zonaras (p. 216) names it πόλιν Ἀράβιον, an Arabian city. Stephanus merely says that it is situated between the Euphrates and the Tigris.

Hadrian, it is well known, relinquished the conquests in Mesopotamia shortly after the death of Trajan; but even if Trajan did not embellish the city of Hatra, the connexion established between that place and Nisibis, where there also exist beautiful friezes somewhat similar to those at Al Hadhr, must have had considerable influence upon the taste of the Atrenians.

From the time of the cession of the Mesopotamian provinces, about A.D. 118, to the conquests of Septimius Severus (200), there reigned Chosroes, Arsaces XXVI. (Vologeses II.) and Arsaces XXVII. (Vologeses III.), who no doubt held Al Hadhr in subjection. It was in the time of Arsaces XXVIII. (Ardawán) that Severus made his first and unsuccessful attempt to reduce Hatra; but the second attempt was attended with success in the time of Arsaces XXIX. (Pacorus). The resistance made by

Hatra against the Roman arms is among the most remarkable features in its known history, and affords evidence of the high degree of military skill and great internal resources which were possessed by the Atrénians, as well as of advantages of position. The conquest of Severus does not appear to have been preserved by the Romans, and although some of the monuments seem to have belonged to the time of the Sassanide or Sasanian dynasty of Persian kings, still it would appear that, from causes now involved in obscurity, the City of the Wilderness was abandoned in the early period of that dynasty, for we find that on the retreat of Julian's army under Jovian, they passed by Ur, leaving Hatra to the left as before described, noticing the city as having been deserted before that time, "olimque desertum."

This period of the history of Hatra is succeeded by another interval of impenetrable obscurity. No sculpture nor monuments of any kind indicate the existence of a Christian community within its walls, which is the more remarkable, as Nišībīn became the seat of a patriarch, and Al Ḥaḍhr was in the centre of a newly-converted and eminently Christian people; but a single inscription comes to inform us that in the year 1190 (586 of the Hijrah), one of the Khalifs of Baghdād, undeterred by the colossal images, which infringe the laws of Moḥammed, attempted to restore the fallen grandeur of this ancient city. Nor was that inscription merely the expression of capricious vanity; it was an index to a great road, as previously noticed, restored from ancient times. There are, however, no Saracenic monuments at Al Ḥaḍhr, and the Khalifs appear to have held that place by a brief and unstable tenure.

It only remains to be remarked respecting the name of Al Ḥaḍhr, which appears at first to be a corruption of Hatra or Hatre, that it has a very distinct Arabic meaning—the word being particularly used to designate the dwellers in towns or cities, in opposition to the Bedwīns, or roving tribes. This would agree with Zonaras's view of the subject. But it has also a more antique Chaldean meaning, Hutra or Hatra signifying in that language a sceptre, and figuratively the seat of government. Al Ḥaḍhr and Hatra or Atra may have been equally derived from this source, which some may perhaps consider the more likely, as the city appears to have had a Chaldee origin.

The river Tharthar, which gives life and verdure to the prairies of eastern Mesopotamia, has its origin from sources in the hills of Sinjār. Its waters are brackish, but not unpleasant at some seasons of the year, and it is known to lose itself in the salt lake called Al Milh. The red sandstones of Mesopotamia, W. of Al Ḥaḍhr, also furnish rock salt. According to some of the Oriental geographers, there was formerly an artificial com-



munication existing between the Khábúr and the Tigris, or this river and the Tigris; but I regret only being able to call attention to the fact, not having the authorities at hand.

*Thursday, April 23rd.*—We left Al Ḥaḍhr (6h. 45m. A.M.) in a drizzling rain, which continued more or less all day. The Sheikh guided us to a ford of the Tharthar, a little above the ruins of an ancient bridge; from whence continuing our route in a direction from N. 30 to 40 E., we struck right across the grassy plains towards Móṣul. The sharp eye of the Arab distinguished Bedwíns on the extreme verge of the horizon, when almost undiscernible by an unpractised observer. 1½ hour's journey brought us to Wádí-l Aḥmar or Ḥamrá, the Red Valley, where the red sandstones beneath the gypsum are denuded, but we found there stagnant pools of bitter water. At mid-day we stopped to give the horses a feed. At 2h. 30m. we passed by a low range of limestone hills, forming the extreme westerly prolongation of the Tel Nujm. 2 hours from this, always travelling at a rate of about 5 miles an hour, we came to the Wádí-l Kaṣab, the plain around which was covered far and near with the tents of agricultural Arabs, who as a reward for their industry, in a country where the administration is so powerless, have to pay tribute at once to the Sultán and to the Shammár Arabs. These tribes were the Kháyaliyín, "the deceivers;" the Jubur, "the restorers;" and Ḥadidiyín, "(the men) of iron." Passing this plain we entered upon the Jubailah hills, in a valley of which, called Al 'Adhbah, or the "fresh waters," we found encamped the Juhaish, previously noticed, the Duleim, and the Na'áim, "the benevolent,"—agricultural tribes. Night overtook us soon after entering upon the hills; being clouded, we could neither see the compass nor the stars, and soon lost our way, wandering about up rocks and down into valleys till we heard the barking of dogs. While following the direction of these sounds, we stumbled upon a path-way, and keeping to it with a careful tenacity, we reached the brook and ruins of Khidhr Ilyás, from whence the road to Móṣul was familiar to me. We arrived at the gates of the town, after a journey of about 60 English miles, a little before midnight, but could not prevail upon the Kaṭújí\* to open them, so we were obliged to loiter in our wet clothes under a deserted vault till the break of day. Since our return to Móṣul several of the Shammár Arabs have repaid our visit, upon which occasion we presented them with pieces of calico for shirts and kerchiefs of British manufacture, and have established friendly relations with them, which will much facilitate our further journeyings in Mesopotamia.

The geographical botany of the great tracts which we travelled

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\* Kaṭújí or Kaṭájí, *i.e.* door-keeper in Turkish.—Ed.

over on this excursion can be described in a few words, and may therefore find a place in the present report. There are scarcely any spots that are actually deprived of all vegetation. The most naked have a few Lichens, among which are prominent a grey *Lecidea* with black raised apothecia or fructification; next to this in frequency is a pink-coloured *Cetraria*; on the extreme verge of these grow a few pseudo-lichens, more particularly *Verrucaria maura* and *V. epigea*. Oat grass is by far the most abundant of the gramineous plants. This single species covers whole uplands of miles in extent, to the exclusion of everything except a few flowering plants, which at this season of the year were the *Ranunculus Asiaticus*, and certain species of *Hieracium* and *Crepis*. The beautiful *Chrysanthema* and *Gnaphalia*, belonging to the same family, which also, with a few *Centaureæ*, adorn the wildernesses in summer, had not yet come into bloom. Other grasses were also met with, among which *Hordeum pratense* and a delicately-panicked *Poa* advanced upon the most sandy spots.

In the drier parts of the plains, grasses became more rare and lichens more common, but these tracts were clothed with a more prominent vegetation of under-shrubs of wormwood; among which the most common species were *Artemisia fragrans* and *A. absinthium*. In these unfavoured spots there were few flowering plants, and they were mostly gathered round the vast ants' nests, or had sprung up where cattle had been pasturing, or the Bedwīns had bivouacked. Among the social plants certain vagabond species were met with here and there, especially where there was a pathway. Such were the gay *Aster pulchellus*, *Allium roseum* (everywhere), *Papaver dubium*, *Campanula glomerata*, and *Gentiana campestris*, common everywhere. *Romeria hybrida*, *Matthiola varia*, *Matricaria chamomilla*, and *Anthemis nobilis*, and two species of *Erodium*, on the more fertile spots. The family of the *Leguminosæ* was also represented by the genera *Cytisus* and *Vicia*, and that of *Caryophyllæ* by a few species of *Saponaria* and *Silene*.

On passing the Wādī-l Kāṣab and coming into the country of cultivating tribes, new species, unknown in the wilderness, immediately make their appearance, even on plains in other respects of similar characters; among these especially *Trollius Asiaticus* and a yellow variety of *Ranunculus Asiaticus*, but rare, *Adonis flava*, *Ornithogalum umbellatum*, *Gladiolus segetum*, and *G. Byzantinus*, *Iberis saxatilis*, *Calendula officinalis*, *Malva rotundifolia*, *Convolvulus*, *Althæoides*, &c. It is curious to observe how many of the Phanerogamous plants which grow in these countries are British species: of about 40 which I have collected this spring near Mōsul upwards of 30 are familiar meadow or wayside plants.

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An Account of a Visit to the Chaldeans, Inhabiting Central Kurdistán; And of an Ascent of the Peak of Rowándiz (Ṭúr Sheïkhíwá) in Summer in 1840

Author(s): William Ainsworth

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II.—*An Account of a Visit to the Chaldeans, inhabiting Central Kurdistan; and of an Ascent of the Peak of Rowándiz (Tūr Sheikhíwá) in the Summer of 1840.* By WILLIAM AINSWORTH, Esq.

THE most characteristic feature of the great mountain-barrier which separates Western from Central Asia is the remarkable parallelism of its ranges, the general direction of which is nearly N.N.W. and S.S.E. This chain, which is prolonged to the S. by only a few comparatively low ranges, constituting what I have elsewhere named the Persian Apennines, assumes the height and character of true Alps or principal mountain masses in the districts of Luristán and Kirmánsháh; but there, as to the S. of Kurdistan Proper, in the districts of Suleimáníyeh and Ardelán, and to the N. in the districts of Betlís, Se'rt, and Zákho, the parallel ranges are not so numerous nor extensive as to prevent the tribes of mountaineers from being tributary on the one side to Turkey, and on the other to Persia, or to Turkey solely.

It is, however, between the parallels of 36° and 38° N. lat., or in Kermánj or Kurdistan Proper,\* that the same chain appears to attain its greatest extent and elevation; the number of ranges succeeding one another is there great, and it is only within them that two tribes of mountaineers—the Tiyári and Jellú—belonging to an ancient Christian community, have preserved their independence intact for ages. It is true that certain Kurd tribes or chieftains have frequently thrown off the yoke of the 'Osmánlí on the one side, and of the Persians on the other, and that their wild and lawless habits are strongly opposed to a regular government; but within these few years much has been done towards ameliorating their condition, and towards establishing among them the authority of the Sultán and of a daily improving legislation.

Thus, of the four districts of Kurdistan Proper, Bukhtán is under the government of Zákho and Jezíreh ibn 'Omár, the latter of which was only subdued in 1834-35 by Reshíd Páshá. The tribes of northern Kurdistan were reduced to obedience by Háfiz Páshá in 1837-38. The Bey of Hakkárí is really under the sway of the Páshá of Ván, the fertile shores of which lake bring

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\* Major Rawlinson designates Ardelán as Kurdistan, or the country of the Kurds Proper. This may be true in one sense, as the designation is unknown among the natives, who call themselves Kermánj. But the modern application of the name Kurdistan is justified by long usage: that name is given to the same country in the present day by the Persians, Turks, Armenians, Chaldeans, and Arabs of the neighbourhood, and is generally recognised in Western Europe, though with too great a latitude. In the present day, Kerkúk and Arbíl are considered as towns attached to the Páshálik of Baghdád, and the ancient Adiabene forms part of the Páshálik of Mósul. It is not customary, although quite arbitrary, to consider the country of the plains W. of the outlying ranges of hills in either of these Pásháliks as forming part of Kurdistan. Jezíreh Zákho and Kói Sanjáq, like 'Amádiyah and Suleimáníyeh, are in the hills.









Kotur

Koniyeh

Sar-al-Bagh

Salamast or

Selmas

Dilman

Khosrowa

U'la

Kali shan

Shar Gol

Zendasht

Zendasht Tagh

Ali Khan

Janalawah or Jela libad

Gawalan

Kahise

Argh Tagh

Guard Ho

Khanija

Esgainah

Spring

Derader

Hisar

R. Nozai

Armulla

Dera Zin

Mill

TIUMIYEH

Burdasir

Suhur R.

Ah Kullah

Burajik

Talarash

Bundi

Kara Agatch

Saralan

Asinajch

Thomator

Chir

Kasinli

Fil

R. Buzan

Spring

Sienitic Hills

Granitic R. lcs

Ushmei

Chuh

Sarvagah

Ushmei

Spring

Peak of Rowandiz or Sheikhwa

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Kari Bash

LAKE URUMIYEH

Marul I.

Mounts cov'd with Snow

R I

Jawur Tagh or Tara Jellu

Jellu Tribe

Sheikhw

Bearing of S. end of Resha Kaim & Tara Tobi from Sheikhwa.

Tobi Tribes

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Se-ij Bolak

Mikri

Lahijan

Kendhan M's

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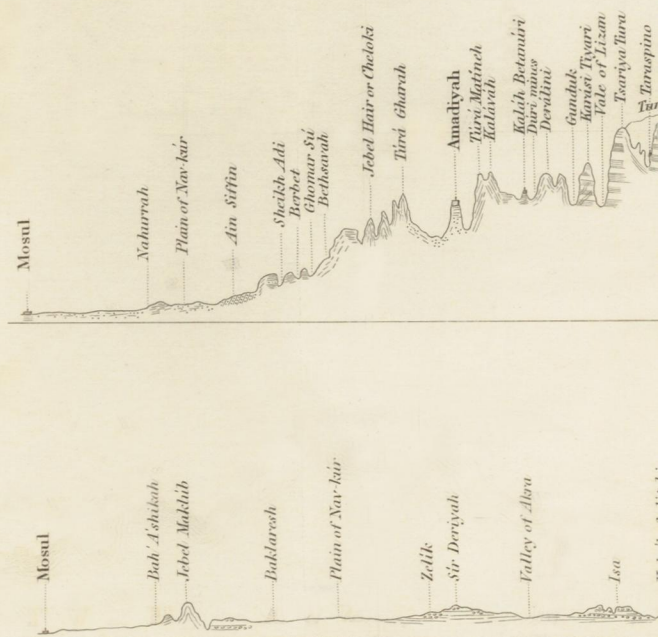


Map  
of Central  
**KURDISTAN**,  
to illustrate  
M<sup>r</sup> Ainsworth's  
*Visit to the Chaldeans.*  
in 1840.

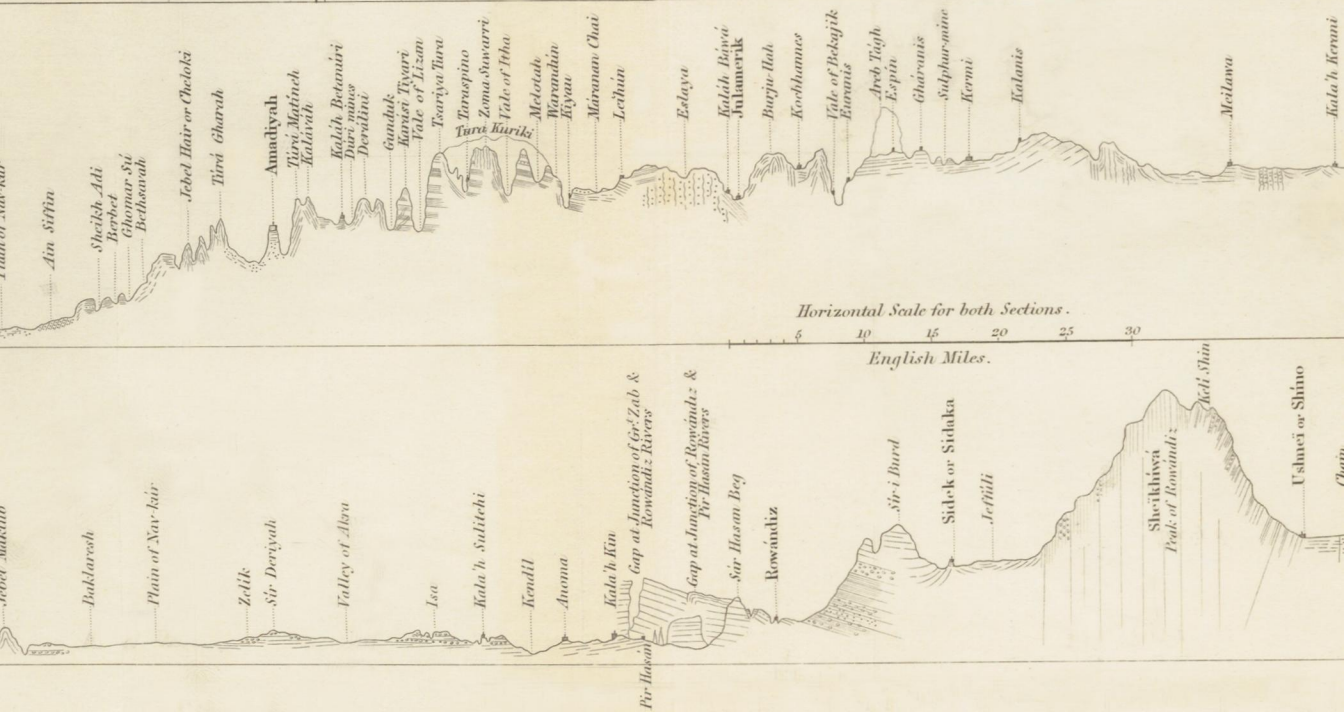
5 10 15 20 25  
English Miles.

Geological Index  
to the  
Sections.

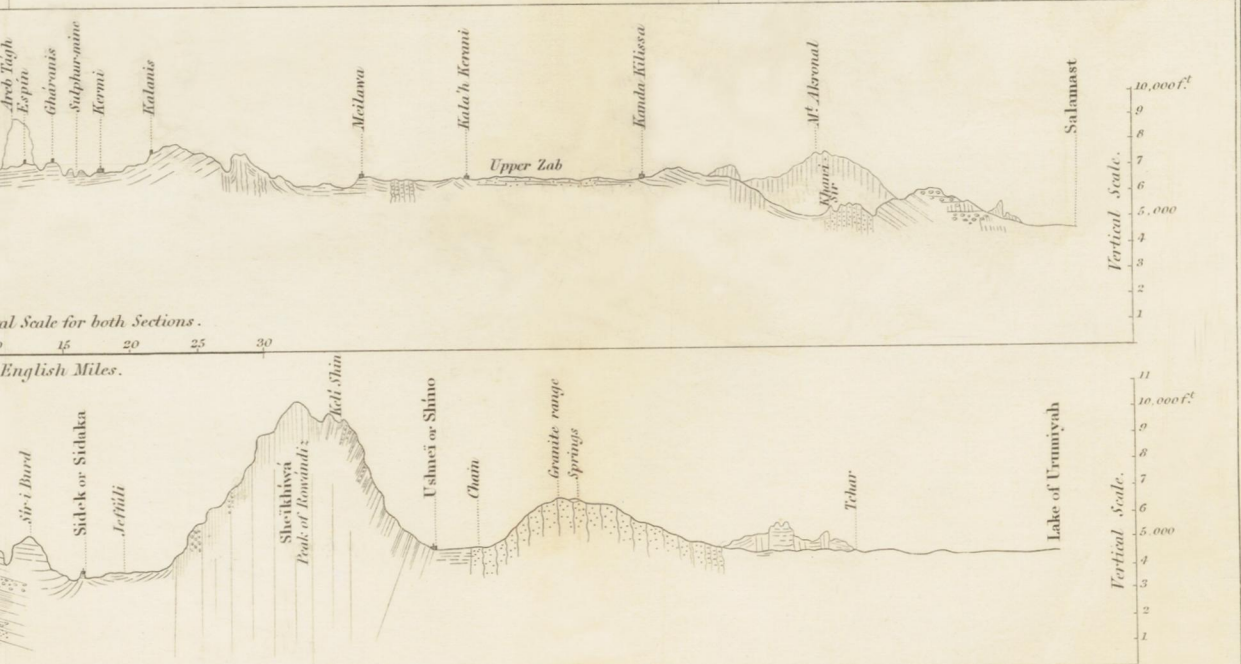
	Granite, Gneiss &c.
	Trachytes.
	Trap rocks. / Dolerites, Basalt &c./
	Diallage rocks. / Ophiolites, Serpentine &c./
	Quartz rocks.
	Conglomerates.
	Sandstones.
	Limestones.
	Schists & Shales.











industry, civilization, and government into the heart of Northern and Central Kurdistan. The Beg of Rowándiz revolted a few years back, and was enticed away from the mountains, his brother having been appointed in his place; for the steep rocks which form the natural barrier of the Rowándiz country were never climbed by the 'Osmánlí troops. The Beg of 'Amádiyá, who governs Bahdínán, the fourth and last district, has been a recent cause of trouble, and in the spring of 1839 'Alí Páshá of Baghdád came to Mósul in order to reduce that disobedient chief, but no active measures were then taken.\*

Mr. Rassám and myself were waiting anxiously at Mósul in the spring of 1840 for two desiderata for penetrating into Central Kurdistan: first, the melting of the snows, which only proceeds so far as to render the great chains passable in the month of June; and, secondly, the arrival of the instruments which we had received notice were on their way from the Royal Geographical Society. Muḥammed Páshá of Mósul, who, by the cession of Márdín to the government of Diyár-bekr, had raised his force, in regular and irregular troops, to about 2000 men, was waiting also for the same favourable season to put into execution the campaign projected the preceding year.

The Páshá started on the 28th of May, and soon afterwards

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\* I regret that in this section, the only one published in "Researches, &c.," in which the altitudes are not founded upon barometrical observations, that I was not aware of Mr. Frazer's observations upon the same chain with the boiling-point thermometer. This has been designated a rude and inaccurate method; but with the improved instruments now made for the purpose, I am inclined to look upon it as much more serviceable than the barometrical one. The instrument appears almost incapable of getting out of order, and is much less easily broken; while I have never yet seen a barometer carried over a chain of mountains, or through a long journey, without losing some of the quicksilver through the pores of the wood. This has happened to me with barometers of various constructions by Newman, Troughton, &c. The late French expedition of MM. Texier, De la Bourdonnaye, &c. in Asia Minor broke six barometers. Good tables of corrections for observations made with the boiling-point thermometer are still wanted; but the instrument itself is, if properly constructed, susceptible of the greatest delicacy. The number of observations made with it upon the present journey amount to fifty-seven, of which six only were liable to doubt; whereas in the barometric observations made across Taurus there are several, as at Márdín, 3175 feet by barometer, which I have since found to require correction.

It might be added, as one of the great characteristics of the mountains of Kurdistan and of the Persian Apennines, that they do not constitute, as is usually the case, chains which rise towards the centre and fall towards the sides, but a country of mountains gradually rising towards an upland beyond. But this is also the case with Taurus, where the waters spring from the northern declivities, as at the Gólek Bógház and the pass of Pelverreh; and great rivers, as the Seihún, Jeihún, Euphrates, and Tigris, find their way through the chain. In the Kurdistan mountains we find the Great and Less Zab presenting similar phenomena, and the same is the case with regard to the Diyálah in Kirmánsháh and the Kerkhah and Dízfúl in Luristán. The elevation of the great Persian upland E. of these mountains is, according to Frazer, at Zergún 4500, at Isfahán 4000 (Hamadán is evidently higher); at Tabriz, according to Brown, 4500; and from several observations by myself the lake of Urumiyah 4300 feet. The sources of the Zab, according to Colonel Monteith, are at an elevation of 7500 feet, which will be found to agree with the thermometric level.

intelligence came of the Persians having occupied Suleimâniyeh. Under these circumstances we resolved to start without further delay, and, avoiding the Turks if possible, by taking a cross road, to reach 'Amâdiyah before them, and before the country should be thrown into a disorder which might render it inaccessible for the whole season.

The first object which we proposed to ourselves was to visit Sheikh 'Adî, so celebrated as the chief seat of I'zedî or Yezidî worship, and whither no European had yet bent his steps. Having ridden a little way out of town on the evening of June 7th, we were enabled next morning (Monday, June 8th) to cross the N. shoulder of Jebel Maqlûb, the Mons Nicator of the historians of Alexander, and from the contorted limestone of which issue some abundant springs of fine water. On the south-western face of the same mountain are also the ruins of a Christian monastery, called Deir Sheikh Matté, the monastery of Sheikh or Father (Saint) Matthew.

Beyond this a country of low hills of tertiary sandstones led us to the plain of Nav-kûr, or the place of mud (not Nakûr), watered in its centre by the Khazîr, or Bumadus, and bounded to the N. by the limestone range of Raḥbân Hormuz, at the foot of which is the large Yezidî village of Bâgh-Idrî; to the N. E. by the sandstone hills of 'Ain Siffîn; and to the E. by the limestone rocks of Aḳra', through which the river forces its way from the N., apart from the hydrographical basin of Aḳra', which will be afterwards described.

We reached 'Ain Siffîn after a journey across the plain of 4 hours, and entered at this place upon the mountainous country. The plain of Nav-kûr, except when cultivated, is almost entirely overgrown with species of glycyrrhiza and artemisia, and certain social umbelliferous plants. Already at 'Ain Siffîn a slight change in vegetation is perceptible. The common thorn makes its appearance; and the rivulets are adorned with the bright pink blossoms of oleander, and afford water-cresses, a luxury abundant throughout Kurdistân, though unknown in Mesopotamia. On entering the hills the remarkable increase of animal and insect life also attracts attention: large snakes of an ash-grey colour are very common, and we sometimes observed them engaged in captivating the beautiful lizards of the country: coleopterous insects, of brilliant colours, basked on the flowering plants; and there occurred, on a species of euphorbia, a yellow caterpillar with bright scarlet spots, and which attained from 3 to 4 inches in length, with a proportionate bulk of body.

Two hours' journey over the outlying hills brought us to a more lofty range of limestones and sandstones, which we crossed by a narrow glen, watered by a tributary to the Khazîr, and

abounding in a varied vegetation, more especially of shrubs. About  $2\frac{1}{2}$  miles up this ravine the valley widens, and gives off two other lateral and parallel valleys; that to the S. contains the village of Magheirah: in the central valley is that of Kathandiyah, while to the right is the northern vale, more narrow and deeply clad with wood; and out of a dense and beautiful grove at the head of this rise the conical spires of the temple or tomb of Sheikh 'Adi, at once a secluded and beautiful site. Sending the mules to a spring near Kathandiyah (temp.  $59^{\circ}$  Fahr., air  $89.6$ ), Mr. Rassám and myself turned up the valley of Sheikh 'Adi, which is commanded by a conical summit of the same name. We scarcely expected to overcome so far the religious scruples of so severe and so mysterious a sect as the Yezidis, as to be allowed to penetrate into the sanctuary; but after taking a rapid sketch of the building, which stands at the base of a perpendicular cliff, and has two conical spires, one larger than the other, pointed, and supporting copper balls and crescents, we continued our way, and were met by the guardian of the place, who, with some slight expressions of distrust, ushered us to a gateway, which led into a vaulted stone passage, through the centre of which ran a stream of cool water. This passage was about 40 paces long, and led into an outer court, overshadowed by large mulberry trees, well paved with flags, and having large cisterns of clear water, besides separate bathing-rooms, for the ablutions previous to prayer. Tempted by the refreshing appearance of the water, as well as from policy, without speaking a syllable foreign to the ears of those present, we washed ourselves, and taking off our shoes, were admitted into a second and larger court-yard, with arched recesses along the sides, and the temple at the bottom. This spot was as clear, cool, and inviting as the first yard; and we could not help thinking what a delightful summer residence Sheikh 'Adi would make. Descending a flight of steps, we now entered into the building itself. It was a great vaulted apartment, like an ordinary mesjid: on an elevated terrace within it, and screened by green curtains, was the coffin said to contain the remains of Sheikh 'Adi. Round this were spots where fires of bitumen and naphtha are burnt at the time of the annual festival. Beyond this hall is an inner one, to which access was refused us. I, however, opened the door, and saw an apartment lower than the chief one, and containing only a few planks and other lumber,—a place most decidedly neither of sanctity nor of mystery.

We now asked the Yezidis present concerning the peacock, of which they at once declared their ignorance. The question was put to them publicly and so abruptly that no opportunity was given to prepare an evasive answer. I carefully watched the expression of their countenances, and saw nothing that indicated deceit; on

the contrary, the expression was that of surprise at the inquiry ; and I am strongly inclined to think that the history of the Melik Táús, or king peacock, as related by Father Maurizio Garzoni, M. Rousseau, Buckingham, and more modern travellers, as Mr. Forbes, is a calumny invented by the Christians of those countries. I venture this assertion, however, with reserve ; for it is curious that a Christian residing at Kathandíyah, in the neighbourhood of the place, still persisted in the truth of this tradition. The Mohammedan Kurds (not Yezîdîs), who served as muleteers, remarked to me, that I had myself found it to be a falsehood. The images of David and Solomon have no more existence than the peacock ; and I need not add that the account of their assembling on the eve of the festival held on the tenth day of the moon, in the month of August, of the lights being extinguished, and of their holding promiscuous intercourse till morning, has every appearance of being a base calumny, assailing human nature in general, while aimed against the poor Yezîdîs in particular. I have seldom seen a more respectable, benign, good-looking Mullá than the one who superintends the church of Sheikh 'Adî. I inquired when the great bitumen-fires, of which I saw the traces, were lighted. "On the night of the festival," was the answer. The broad blaze of numerous fires of mineral pitch light up a scene which the imagination of the ignorant and wilful Easterns has filled with horrors. My informant, however, whatever might be his doctrines, had the look of one habituated to a peaceful, meditative, and pious life, and most certainly not of the leader of vicious and licentious orgies.

The only peculiarity that I observed at Sheikh 'Adî to distinguish it from any other mesjid were, besides the bitumen fires, some sculptures at the door, representing a large snake, painted black, and probably emblematic of Satan, the evil spirit, whom they rather propitiate than worship. There was also an ill-formed quadruped—it is impossible to say whether a dog, a horse, or a lion—and a hatchet.\*

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\* The proof of direct worship of the Spirit of Evil has been mainly founded upon the fact, that no traces have been perceived of the worship of Yezdán, or Ormuzd, or the good principle, in opposition to Ahrimán, or the evil principle. This is at the best but a negative argument. Whatever has been propagated among these people of the ancient doctrine of the Parsis must be now corrupted by gross superstitions ; and we may, perhaps, recognise in the sculptured idol accompanying the serpent, the emblem of I'zed Ferfer, or other of the Parsí attendants upon the evil spirit. (Tennemann's History of Philosophy. Brussels, ed. fol., vol. i. p. 72.) The name I'zed suggests a coincidence as curious as that remarked upon by Major Rawlinson from Theophanes, and a letter of Heraclius to the senate, noticing a position in Adiabene, called Iesdem, and which he considers as a settlement of I'zedis, or, as they were afterwards named by the Mohammedans, Yezîdîs. (Jour. of Roy. Geo. Soc., vol. x., p. 92.) Major Rawlinson does not make any further remarks upon this sect ; but it would appear from this passage that he regards them as I'zedis, or followers of I'zed, as suggested above, rather than of Yezîd, the second of the Omniade Khalifs. They have, however, many

The village of Sheikh 'Adí stands on the top of an adjacent cliff, above the prettily-situated temple. We partook of mulberries from the hands of those kind villagers, who, had all the accusations laid against them been true, would have acted very differently towards strangers visiting their most sacred place.\*

The two largest villages of the Yezídís in this country are Bah 'A'shiḳah, at the western foot of Jebel Maḳlúb, surrounded by olive groves with stone-built houses, and pleasing situation; the next is Báḥ idrí, at the foot of Rabbán Hormuz, the seat of Sheikh An, their patriarch. Besides this they are widely distributed through Bahdínán, and, as is well known, constitute the chief population of the Sinjár. Their villages are easily known by the clean whitewashed tombs with conical tops which generally crown some small eminence in their neighbourhood. On a first journey in Bahdínán I had been taught to look upon these as temples to the evil spirit; but a now extended opportunity of inquiry has satisfied me that they are exactly the same as the Ziyárets, or holy men's tombs, in the villages and mezárs of all Western Asia.

*Tuesday, June 9th.*—A gentle ascent led us to the crest of the Sheikh 'Adí range, wherein a well-chosen and picturesque situation, as usual, was a burial ground of the Kurds. The sanctity of these inclosures, mostly situate on lofty and commanding positions, preserves the trees which are planted, or that spring up naturally, from destruction, and they thus afford the best specimens of the capabilities of the soil and climate for forest growth. Numerous vineyards occupied the hill-sides, and by these we descended into the small vale of Berbet, out of which ourselves and the rivulets found their way by a narrow and precipitous ravine in limestone, about  $\frac{1}{2}$  a mile in length, with a bad road, and which leads to the expanded and fertile valley of the Ghomár Şú, the head waters of the Khazír, or Bumadus. This valley is rich in vegetation and cultivation, and contains many villages. We crossed it in a diagonal direction, and in about  $1\frac{1}{2}$  hour reached a village at the foot of the range of hills which

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superstitious traditions concerning this khalif. Be this as it may, the I'zed, Karuben, Sheikh Ma'zen, or exalted doctor (as the evil spirit is variously called) of the I'zedis, is a corrupted doctrine, converted by the ignorance of the people alone into whatever exists of direct worship, by the same process that in the Roman Catholic Church the doctrine of the intercession of saints becomes in the hands of the uneducated, a real saint and even picture-worship.

\* Kinneir speaks of the I'zedís as tolerant in points of religion, free from narrow prejudices, and possessed of noble and generous principles. The I'zedis of Bahdínán must apparently be distinguished from the same tribe in Sinjár. The great villages of the I'zedis of Bahdínán, more especially Bah 'A'shiḳah and Bah Idrí, are the best built, most flourishing and cleanest spots in Adiabene, and the inhabitants are kind and hospitable to Franks, but they detest Turks, who never fail to heap upon them all kinds of absurd reproaches. There is no doubt that the I'zedís are quite open to a better education, and even to a more humane religion.

bounds the valley to the N. Here we first observed the horns of the chamois of Kurdistán; about  $2\frac{1}{2}$  feet in length, of a dark black colour, and curved inwards, with knots on the convex part.

The ascent of the hills, composed entirely of supra-cretaceous limestones, brought us into the region of the valonia oak, where the trees, however, were of spare growth. The ascent occupied  $1\frac{1}{2}$  hour, when we were agreeably surprised to find the range breaking suddenly off in a steep precipice, beneath which, at a depth of 800 feet, was a narrow vale, with many villages and gardens, and over which rose a huge mass of alternating limestones and sandstones, to the height of about 2000 feet, called the Chá Zírwár. We were obliged by this character of the country to alter our course, and keep up the side of the precipice, till, passing over some broken hills clad with forests of oak, we found ourselves in the valley of Chelóki, bounded to the N. and S. by narrow ranges of limestones, with a quâquâversal dip, rising so steeply and terminating in so sharp an edge as to look almost like walls of art, an appearance common to the outer ranges of limestone hills. Immediately N. of these double ranges is the lofty and Alpine chain of Gharah or Ghararah, separated in a direct line by a valley scarcely 1 mile in width from the Jebel Haïr or Chelóki ranges, and bounded to the N. by the great valley of 'Amádiyah. This chain, composed of various limestones and sandstones, separates the tributaries of the Great Zab and the Khábúr or Zákho river from the tributaries of the Khazír, or Bumadus, and those of the Khosar, the river of Nineveh. It is prolonged to the N.W. by the Chá Spí, or Jebel Abyadh (white mountain)—Researches, p. 265—which, reaching the Tigris, is prolonged into northern Mesopotamia by the low sandstone hills which bear the old name of Jebel Gharah. To the S.E. the same chain is prolonged to the ravine of the Great Zab, and beyond that by the mountains designated as the Sar Hasan Beg, which will be afterwards described. The central chain of Gharah presents at times a common single crest, the lime rocks having a quâquâversal dip; but at times the union between the opposite beds is not perfect, and a craggy valley, of from  $\frac{1}{2}$  a mile to 1 mile wide, is left between walls of rock, dipping to the E. and W.

At the easterly foot of the Túrá, or Jebel Gharah, and near the village of Zindár, are some copious springs, furnishing a tributary to the Khazír; and near this we obtained a few organic remains, illustrative of the age of the sedimentary rocks of the Túrá Gharah. Our road was carried over this chain in a tortuous manner, chiefly through wooded and picturesque glens. The height of the summit level above the sea was, by boiling-point thermometer, 2187 feet: the culminating points may be judged to rise to 4800 feet. There was still a good deal of snow on the



eastern slope, and patches on the western. We halted for the night in a vale at an elevation of 3620 feet, without habitations, but having a fine spring of water. Temp. 52·7 Fahr.; air, 78·7.

*Wednesday, June 10th.*—We had nothing but a gently undulating and well-wooded country from our station of last night to the valley of 'Amadíyah, the bottom of which is occupied by a deposit of supra-cretaceous sandstone and sandstone conglomerate, of little adhesion, and deeply intersected by water-courses. From the undisturbed horizontality of the beds I was inclined at first to look upon this sandstone as a local deposit, filling up this great valley, but a prolonged investigation disclosed that this formation has been tilted up by the Túrā Gharah, but not by the Túrā Matíneh of the Chaldeans, or the Chá Matíneh of the Kurds—the range of mountains which bound the vale of 'Amadíyah to the E. or N.E.

The head waters of the Gharah river, a tributary to the Great Zab, spring from a slight swelling in the soil of the valley, about 12 miles W. of 'Amadíyah; while from the opposite side of the same eminence the waters flow to the Khábúr. A river which at the place of our descent was a mere brook became, before reaching 'Amadíyah, 15 yards in width, being supplied by mountain torrents, which issue from every gap and from every snow patch in the Túrā Gharah and the Túrā Matíneh. The detail of some of these will be given in the map.

The valley of 'Amadíyah, although containing many villages, belonging partly to Kurds of the Bahdínán tribe and partly to Chaldeans, is but sparingly cultivated, being mostly occupied by forests of *valonía* oak, which more especially stretch along the eastern foot of the Túrā Gharah from hence to Rowándiz, a distance of 3 days' journey, and this is the great district for gathering galls and *valonía*; for in our travels further eastward we scarcely met with any more groves, still less with forests of oak.

We had been accompanied from Móşul by a Roman Catholic Chaldean, of the name of Dávud, a respectable gall-merchant of 'Amadíyah, who, being well acquainted both with the Kurdish and Chaldean dialects of the mountains, was engaged to act as interpreter. From this man, and from other inquiries instituted at 'Amadíyah and at Rowándiz, it appears that the perianth of the *Quercus valonía* is alone gathered for the market, but that galls are obtained both from the *Q. valonía* and from other oaks. I did not find them in the act of gathering, but the trees pointed out as furnishing galls were *Q. cerris*, *pedunculata*, and *infectoria*. The gall-apple, which is known to be the product of a species of *Cynips*, is only gathered from the stalks or stems; that on the leaves is pulverulent and useless. The zone of oak in these mountains extends from an elevation of 1500 feet to 2500 feet

above the level of the sea; above and below this the trees become mere shrubs.

The valley of 'Amadíyah, excepting the slight elevation intervening between the watershed of the Khábúr and the Gharah rivers, extends from the Tigris to the vale of Rowándiz, being, however, curved about 12 miles to the E. of 'Amadíyah, in the district of Zibeirí, and is about 5 or 6 miles in width. The town of 'Amadíyah is built upon a rock-terrace of limestone; the only one which overlies the sandstone throughout the valley. This rock lies on the eastern side of the valley, and is an offset from the Matíneh range. The extent of the terrace, which is in shape somewhat oval, is  $\frac{3}{4}$  of a mile in length, and  $\frac{1}{2}$  a mile in width. It is everywhere surrounded by cliffs, varying from 40 to 80 feet in altitude; consisting of compact limestone reposing upon sandstone. It took us 45 minutes to ascend from the base to the gate, the road being tortuous. There are two gates to the town, one to the N.W., the other to the E. The town stands on the eastern portion of the terrace, the remainder being occupied by graves and a square open castle, with circular towers at the angles, built by the late Beg of Rowándiz, when he sacked this place. The rock terrace is also defended at various points by guard-houses, towers, and irregularly-constructed bastions, with occasional curtains, which are not however carried round the rock. The town is all in ruins: of the houses formerly existing, only about one-third are now in repair or inhabited; and of the bázár about one-fourth is made use of, the remainder being in a state of decay. Above these perishing materials there rises a seráí, the residence of the páshá, the lower part built of stone, the upper of mud; and near it is a beautiful model of a pillar, a detached mináret, the only one in the place, and also near the only existing mesjid. At present the chief population of 'Amadíyah are Jews, who have 70 houses here and 3 synagogues. These poor people have among themselves a tradition that their ancestors have dwelt here from a period shortly subsequent to the captivity. The Moham-medans have 60 houses, and the Chaldeans have 20 houses, of which 5 are Roman Catholic. There are also 5 houses of Armenians, who pursue their usual avocations as jewellers, armourers, &c. There was a garrison of nearly 200 irregulars, chiefly Arnaúts and Greeks of Rúmelia.

The Chaldean community of 'Amadíyah, which remains steadfast to the ancient faith, has only one priest, a most simple kind-hearted man, called Kashiya (priest) Mandú. Besides 'Amadíyah, the duties of his post extend over the villages of Bibábí, Hamziyah, Belaghání, Arrishk, Haradán, Meristek, Komání, Derí, Derzín, Erdil, and Beg Kótí; a district of upwards of 40 square miles, which can be well supposed to derive little advan-

tage from a single spiritual instructor. Hence the progress of the Roman Catholic faith among the Chaldeans of Bahdínán, which has already gained over the villages around Zákhhó, long since left without any teachers of the faith of their forefathers.

By the recent changes in church government effected in Móşul in June, 1840, by the envoy of the Pope, M. de Villardille, bishop of Lebanon, Már Zahar, bishop of Móşul, was made patriarch, with the title of Már Nicolaus; and to him were given Baghdád, Móşul, and Al Kósh. Már Yúsuf assumed the episcopal supremacy over the town and district of 'Amádiyah; Már Petrós that of Jezíreh and Zákhhó; Már Michael, of Se'rt; Már Báseils, of Diyár-bekr; Már Agathos, of Márdín; and Már Laurentius, of Kerkúk.

A Chaldean bishop was appointed, about seven years ago, to 'Amádiyah, by the patriarch Már Shim'ón; his name is Már Elias: but, after living at 'Amádiyah only one year, he seceded from the Chaldean, and became a convert to the Roman Catholic church. His character has, however, become suspected among the Roman Catholics, who have reduced him to the lower rank of priesthood; and he is strictly watched at Móşul, as fears are entertained of his desire to return to the Chaldean church. He would not, however, be received in the mountains, where he is equally despised for his tergiversation by the laity and the clergy, the latter of whom are the more particularly indignant from the great responsibility of the charge entrusted to him.

Although the priest of 'Amádiyah, Kashiya Mandú, received holy orders from Ish'iyah, Chaldean bishop of Berráwí, residing at Dúrí, he and his flock pay their tithes and contributions to Már Yúsuf, Roman Catholic bishop of 'Amádiyah, now residing at Al Kósh. This is in virtue of an arrangement made by the Roman Catholic church with the 'Osmánlí government, who would be less secure of their part of the revenue if it were paid to the bishop of Berráwí, while the Roman Catholics would naturally get nothing from a church from which they have seceded. Two other districts, that of Dirákan and that of Núrwar, containing many villages of Chaldeans, are similarly circumstanced: each of the above-mentioned districts has three priests.

The only antiquities which we found at 'Amádiyah were the foundations of a temple hewn out of the solid rock on the surface of the terrace. It is 20 yards wide and 30 long, and about 8 to 10 feet deep. At the E. end is a cut in the rock for an altar, and to the S. a sepulchral cave, divided into three compartments. In the interior there are three rows of pillars, shaped like obelisks, only truncated at the summits: this has all the appearance of being an ancient Persian fire-temple, and as such was known to the inhabitants. There is also a bas-relief of a

human figure, rather larger than the natural size, cut in the face of the rock below the N.W. gate. The figure is much mutilated, but what remains of it resembles in its details the statue in the cave of Shápúr, which is generally supposed to represent the conqueror of Valerian.\*

Not far from 'Amadíyah is a small Chaldean monastery, untenanted and without doors. The town itself does not appear to have been a place much frequented by pious Mohammedans, as there are only two ziyárets in the mezár or burial-ground. 'Amadíyah stands in N. lat.  $36^{\circ} 47' 29''$ , as derived from an observation of the moon's meridian height, and at an elevation by boiling-point thermometer of 4265 feet.

\* These vestiges of a Persian temple situate in one of the most prominent positions on the rock-terrace, and belonging, as would appear from the character of the statue sculptured at the portal of the city, to the early monarchs of the Sasanian dynasty, would indicate that one of the sacred fires or pyrea of the Magians existed at this place; and this, combined with the strong position of the fort, favours the supposition of its being the Assyrian Ecbatana of Ammianus (lib. xxiii. c. 6). Whatever may have been the original meaning of Akbatana, or Ecbatana, which, according to Major Rawlinson (Journ. of Roy. Geo. Soc., vol. x. p. 135), signifies a *treasure-city*, it is certain that that name was very generally applied: hence the great number of the Ecbatanas of antiquity. The city of this name, noticed by Plutarch in his Life of Alexander, was in Babylonia, and not in Assyria, and may be easily recognised, as the Macedonian hero went there next after the battle of Arbela. He was there particularly struck with a gulf of fire, which streamed forth continually as from an inexhaustible source. He also admired a flood of naphtha not far from the gulf. (Langhorne's Plutarch, p. 480.) This description applies solely to the Abú Jekhár, near Kerkúk, at which latter place is a castle-bearing mound of great antiquity, resembling that of Arbela, a city of the same date. It is not surprising that the Magians should have made these natural fountains of fire the object of a peculiar worship. Major Rawlinson (opus cit. p. 137) quotes the *Asiat. Res.* (vol. iii. p. 10) to show that so great was the veneration in which these fountains were held, that they were visited by devotees from India. But save the fires there are no remains of antiquity at the place nearer than Kerkúk, for I have carefully examined the site and circumstances connected with these natural fires. (*Researches*, &c., p. 242 *et seq.*) The site of the great Median Ecbatana has been satisfactorily determined by Major Rawlinson. But Stephanus Byzantinus says: "Est etiam oppidum Syriæ Ecbatana;" and we have the authority of Pliny and Hesychius that this was situate upon Mount Carmel. There was also a Persian Ecbatana: Pliny says, "Magi obtinent Passagardas castellum, in quo Cyri sepulcrum est: et horum Ecbatana oppidum." The Arsacian Ecbatana which appears to have been identical with the Ragau of the book of Tobit and the Rhages of the historians of Alexander, is represented according to Major Rawlinson by the ruins of Kal'eh Erig, near Verámin. If it can be shown, then, that there were two Median Ecbatanas, one Persian, one Syrian, one Babylonian, and one Arsacian, I can scarcely see the grounds for scepticism as to the existence of an Assyrian Ecbatana. Mr. Rich found that 'Amadíyah was still known to some by the name of Ekbadan; and although my inquiries on this subject have not yet been attended with success, Mr. Rich was far too careful a registrar of facts to have been easily misled, and too well acquainted with the Asiatic character to have founded his statement upon a leading question, such as "Do you call this place Ekbadan?" which, if the affirmative is supposed to be sought for, will always be given.

Our questions led to the following results: first, that the Kermánjí, or Kurds, know the town universally by the name of 'Amédi, or "the town of the Medes;" and that 'Amadíyah is a corruption of this name by the Arabs and Turks, not known in the mountains: they in the same way change the name of the Berráwi into Berráwiyah; that of Tóbi into Tobiyah; and so on with many other Kurdish and Chaldean tribes. Secondly, that they have a tradition that the town, notwithstanding its Median conquerors and Magian worship, was founded by the Apocryphal prophet Tobias.

The same night that we arrived at 'Amadíyah, the Chaldean mountaineers made a descent upon a Mohammedan village, peopled by the descendants of an Amir Sayyid, or chief descended from the Prophet, only a mile from the town; and from all the information I could collect, although most anxious to disbelieve it, only two persons out of forty escaped the general slaughter. I never could learn exactly who were the authors of this atrocious and indefensible crime, for in the interior I did not find the men even in arms, although threatened with war on every side. It is difficult, however, at a distance to form an idea of the hostility existing between the Chaldeans and Mohammedans. The Mohammedans themselves did not refrain from constantly expressing, even before us, their jealousy and abhorrence of the followers of a despised and detested religion, retaining its independence in the heart of Islamism. When a Tiyárí man comes to 'Amadíyah he is subjected to every kind of indignity and insult, spurned, kicked, and spit at. His Redeemer is cursed and vilified to his face; often they are seized and made to work, and many have been put to death. Thus persecuted, it is not surprising that in time of war they retaliate upon their oppressors in a sad sanguinary spirit; their passions are too fearfully roused, and the hatred too deep and long endured, to subside in mercy and forgiveness; and ages of tyranny and intolerance have driven from their bosoms all feelings of pity towards their haughty and implacable Mohammedan enemies.

At this time Moḥammed Páshá, of Móşul, was, with his detachment, encamped at a short distance from 'Amadíyah, the Kermánj chieftain of which had taken refuge in Kumrí Qal'ah in the Berráwí country. This day he came up and pitched his tents within a mile of the town; and greatly did the officers rejoice as they spoke of what they deemed certain—the immediate subjection of the Chaldean mountaineers. In the evening the rocks were lined with soldiers firing salutes, which were answered by the guns from the camp; but we went into the heart of the country, and returned from thence, while the 'Osmánlí Páshá was engaged in making overtures to the chiefs, without the least chance of success; and when we returned to Móşul, he had retired without being able to effect anything beyond the pacification of a part of his own province, by the occupation of Aḳra' and the expulsion of the old governor of 'Amadíyah.

Aware that the roads were now occupied by armed mountaineers, who perhaps might not put much faith at such a moment in the avowed purpose of our visit, we immediately on our arrival sought out and found with difficulty a man whose poverty and rags might serve to protect him, while he ventured to the Bishop

of Berráwí to announce our coming, and request a free passage. We spent two days, tormented by sand-flies, waiting for this messenger, who at length arrived the morning of the 13th, when, issuing by the eastern gate, to avoid observation, we got into the gardens and vale N. of 'Amádiyâh, accompanied by our messenger and the priest Mandú, who had volunteered to go with us to the patriarch.

The pass of the Matíneh mountain is exceedingly beautiful. Near its foot a mountain-torrent (Suláf cháí) comes tumbling over the rocks, amid precipitous cliffs variegated by a rich vegetation and long pending stalactites or a rough covering of travertino deposited by the waters; climbing and creeping plants swing in flowery festoons down the water's edge, petrified in their course, and their verdant foliage is rivalled in various tracery by the stalagmitic deposits. The torrent forms three successive falls of from 18 to 20 feet in height, alternately losing itself in caves of green foliage or re-appearing as a sheet of white foam. After about half a mile of open valley the second part of the pass is attained. It is a narrow gorge in limestone rock—the first of the redoubted *pylæ* of the Hakkárí country. The mountain of Beshish is to the E., that of Sheikhtán to the W. The pass itself is called Geli Muzúkah. An ash-coloured snake, having bright yellow bands, waved itself occasionally up the smooth and perpendicular face of the rock; but its progress under such circumstances was very slow, and it might have been easily killed. The Asiatics generally appear to entertain a great prejudice against snakes, which they always destroy when possible, although the poor creatures are never the first aggressors, and so much to be admired for their great beauty of form and colour, and the elegance of their movements. The houses in Mósul abound with them, but, as is always the case with Nature's productions, they fulfil a beneficial purpose. Ants swarm in these mud-hovels, and these are checked in their increase by the flat-toed lizard, which itself would become numerous as a plague if it were not for the snakes, which also moderate the productive powers of the bat-tribe.

A little beyond the Geli Muzúkah is an isolated rock called Perí Bálgáh-sí, or the Honey-place of the Fairies, apparently inhabitants of Kurdistán. When we got to the crest of the chain we found ourselves amid patches of snow, at an elevation of 5840 feet; and below us the summer-quarters of the people of 'Amádiyâh, which they had not occupied this year on account of the war. It was a delightfully cool pasture, and possessed one mud-building, the palace of the Páshá. These spots, named Yáílá by the Turks, are called by the Chaldeans Zómá, and by the Kurds, or in Kermánjî, Zozan—the present one Zozan Nav-dashtí.

From this point the extensive district of Berráwí extended before us; in our neighbourhood was a long valley dotted with villages of industrious Christians, while at its head was a peculiar rounded mountain, rising above the village of Dúrí, the seat of the bishop of Berráwí. Beyond were two distinct lofty and snow-clad chains of mountains—the one, Túr Devehlí, extending from N. 5 E. to N. 25 W.,—the other, Túrá Shíná, the extent of which was not well defined. To the W. the valley opened amidst mingled forests, rock and arable land, above which rose a group of rude peaks, one of which bore Kumrí Kál'ah, the present asylum of the Kurdish chief of Bahdínán; beyond which appeared a snow-clad group of mountains, the name of which I could not learn. They were the mountains at the head of the Buhtán country.

The chain of Matíneh which we were now crossing, is, it may be observed, the continuation south-eastward of the Jebel Júdí, on which local tradition places the Ark, and which divides to the N. the country of Buhtán from that of Bahdínán, and in the centre that of Hakkárí from the same country, for the tribe of Berráwí belongs to the Hakkárí country. The four great tribes in northern Kurdistán are Bahdínán, Buhtán, Hakkárí, and Rowándiz. The Bahdínán comprehends the sub-tribes of—1. Sindí or Sindíyah (which latter syllable is generally added to all the tribes when spoken of by the Arabs); 2. Sleivání; 3. Gólí; 4. Goyí; 5. Artúshí; 6. Derrán; 7. Kaidí; 8. Sheikh An (Yezídís); 9. Navkúr; 10. Bowát; 11. Nájúkúr; 12. Kal'atí; 13. Kal'ah Deír; 14. Serújí; 15. Shirwán; 16. Baradó's; 17. Gerdí; 18. Misúrí; 19. Berráwí; 20. Dóskí; 21. Kerkí; 22. Rekání; 23. Nerwí; 24. Berráwí Jú; 25. Góví; 26. Telí; 27. Zitk; 28. Sherm; 29. Zobar. The last is the largest sub-tribe.

The Hakkárí, upon whose country we are now entering, comprehend—1. The Tiyárí; 2. The Tóbí; 3. Jelláwí; 4. Piniyaniskí; 5. Al Tóshí; 6. Artóshí Báshí; 7. Bází; 8. Sátí; 9. Oramáří; 10. Júlámérgí; 11. Jellú; 12. Dez; 13. Siliyáshí; 14. Berráwí.

The Christian villages belonging to these tribes, as far as we were able to ascertain, were as follows:—

1. *Tiyárí*.—1. Ashitáh; 2. Zawitháh; 3. Miniyání; 4. Márgí; 5. Kurkáh; 6. Lizín; 7. Jemáthá; 8. Zermí; 9. Shút; 10. Ráwálá; 11. Tel Bekín; 12. Beileithá; 13. Oriáthá; 14. Rowárrí; 15. Lagipá; 16. Mathá Kásr; 17. Bezizú; 18. Rúmthá; 19. Sádder; 20. Serspíttín; 21. Betkhi; 22. Nehr Kal'ahsí; 23. Chamání; 24. Kal'ah thání.

2. *Jellú*.—1. Alsón; 2. Jellú; 3. Ziriník; 4. Marzáyá; 5. Thiláná; 6. Ummút; 7. Zír; 8. Sirpíl; 9. Bobáwá; 10. Bibokrá; 11. Shemsikí; 12. Murt-oríyí.

3. *Júlámergi*.—1. Júlámerik; 2. Kóch Hannes; 3. Burju-llah; 4. Espín; 5. Gavanís; 6. Kótranís; 7. Euranís; 8. Syriní; 9. Bekajik; 10. Daízí; 11. Shamáshá; 12. Murdádishí; 13. Madís; 14. Merzín; 15. Zerwá; 16. Derikí; 17. Kermí; 18. Gesná; 19. Kalánís; 20. Khazákiyín; 21. Kewulí; 22. Meilawá; 23. Pisá; 24. Alónzó.

4. *Berráwí*.—1. Bebál; 2. Ankri; 3. Malaktah; 4. Bismiyáh; 5. Dúrí; 6. Iyát; 7. 'Aínah núní; 8. Akushtá; 9. Misakah; 10. Robarah; 11. Dergáli; 12. Tashish; 13. Básh; 14. Hayís; 15. Derishkí; 16. Máyah.

5. *Tóbi*.—1. Gundukdá; 2. Muzrá; 3. Tomagó; 4. Berijái; 5. Jissah.

6. *Báz* or *Bázi*.—1. 'Orwántiz; 2. Shoáváh; 3. Argúb; 4. Kojijah.

7. *Dez*.—1. Rabbán Dádishuh; 2. Maddis; 3. Chírí; 4. Suwá; 5. Golosel; 6. Már Kiriyaqós; 7. Akóshí; 8. Chalchan; 9. Gorsí; 10. Savams; 11. Chemmáshá.

Besides these there are several districts containing villages comparatively insignificant, of which neither the number nor locality was noted:—

1. Waltí; 2. Neivdí; 3. Gesnák; 4. Daprashín; 5. Búrun; 6. Bíljání; 7. Garwár; 8. Albak (between Júlámerik and the Lake of Ván); 9. Shemso-d-dín; 10. Shapát; 11. Bratsinnai; 12. Dirakán, and 13. Nurwár in 'Amadíyah or Bahdínán.

I subjoin the following as the best estimate that I can form of the population of Hakkári, founded upon personal observation of the various sizes of the villages and of the reports as to their number. It differs very much indeed from others previously published; but these have been founded chiefly upon Oriental exaggerations. The fallacy of Dr. Walsh's estimate of 500,000 Christians, for example, must be manifest to all who will consider the small extent of country occupied by these Christians and its limited productive capabilities:—

1. Tiyári	. 24 vill. at 20 houses each	480	houses at 8 persons per house	3840
2. Jellá	. 12	240	" "	1920
3. Júlámergi	24	480	" "	3840
4. Berráwí	17	340	" "	2720
5. Tóbi	. 5	100	" "	800
6. Báz	. 4	80	" "	640
7. Déz	. 11	220	" "	1760

15,520

To which are to be added out of Hakkári—

In Bahdínán	11 villages, 220 houses, and population	. . . 1760
Town of 'Amadíyah	20 houses	. . . 160
		<hr/> 1,920

And 13 districts not well known, which may be estimated at 100 houses each, or 1300 houses and a population of	. . . . . 10,400
	<hr/> 27,840



The Chaldeans in Persia, the Roman-Catholic Chaldeans in the same country, and the Roman-Catholic Chaldeans in Mesopotamia and Adiabene, taken together, are, on account of the greater resources of these countries, probably more than double the population of Chaldean mountaineers, or Chaldeans of Hak-kárf and Bahdínán.


About an hour's descent brought us to the village of Hayís (Chaldeans), where we found the bishop of Berráwí waiting for us. This first specimen of a chief dignitary of the Chaldean church was highly favourable. I had expected a bishop with a dagger and sword—perhaps, as it was time of war, with a coat-of-mail; but instead of that, we saw an aged man, of spare habit, with much repose and dignity in his manners, and a very benevolent and intelligent aspect; his hair and beard nearly silver-white, his forehead ample and unclouded, and his countenance, from never eating meat, uncommonly clear and fair. On meeting us, he held out his hand to be kissed, and we were then intimate friends. The happy moral influence of Christianity could not be more plainly manifested than in the change of manners immediately observable in the country we had now entered into, and which presented itself with the more force from its contrast with the sullen ferocity of the Mohammedans. The kind, cordial manners of the people, and the great respect paid to their clergy, were among the first fruits of that influence which showed themselves. As we proceeded on our journey the peasantry came from villages even half a mile from the road, to kiss the Bishop's hand; and Kashiya Mandú also came in for a share of the reverences. Little children who could not reach the hand of the Bishop were held up by their parents, and every where the same pleasing testimonies of grateful affection were exhibited.

An hour's journey brought us to a perpendicular precipice of tabular slaty limestone, about 250 feet deep, and at the bottom of which rolled the Robar Elmei, a torrent 12 yards wide by 1 in depth, which flows to the Zab. On the opposite side of the river was a conical hill, bearing a ruined castle, formerly very extensive: I could learn nothing concerning its history. It is called Kal'ah Beitannúrí, and is curiously connected with a tribe of Jews who reside at the foot of the hill in the village of Beitannúrí (*House of Fire*), where they have a synagogue, and who lay claim to this place from remote antiquity.

Our road lay down the Robar Elmei, which we crossed on a wooden bridge, passing several Chaldean villages, and then up a tributary stream to the large village of Dúrí, where the people were waiting for evening prayer; but the Bishop finding it late after performing his ablutions, renounced his intentions, and we walked from Dúrí about half a mile to a picturesque and wooded

glen, wherein were a few hamlets, one of which was the Bishop's residence, while up above, and surrounded by trees, appeared at the foot of a cliff a little whitewashed church, partly hewn out of the rock. This is Már Kiyomah, where the Bishop generally officiates.

Having taken up our quarters on the roof of a house, pleasantly overshadowed by a huge mulberry-tree, evening prayers were said; when I first found out that a person whose clothes were all tattered and torn, whose aspect bespoke the greatest poverty, and who on the journey had always marched before the Bishop, carrying a stick with a certain degree of pomp, was no other than the Bishop's chaplain. After prayers came meals; the Bishop and ourselves eating first, then the ragged but worthy chaplain, the priest Mandú, Dávud and other chiefs of the group; and lastly, the servants went to work with a general scramble. At night the roof of the house presented a happy scene of patriarchal simplicity—two peasants and their wives, two cradles and their noisy tenants, two priests with daggers in their girdles, the chaplain, ourselves, muleteers, servants, &c., were all picturesquely distributed over a space of about 12 yards by 6.

*Sunday, June 14th.*—At divine service this morning before day-break, the sacrament was administered to all present, boys included: raisin-water supplied the place of wine. The cross on the door of the church, the cross on the altar, the Holy Scriptures, and the Bishop's hand, were alone kissed. The cross used by the Chaldeans is rather an emblem than a representation of the instrument of our redemption: its form is this . Such crosses are made in brass, or cut in stone on the churches, as doorways, and often on a large stone at the entrance of a Christian village, and it is kissed by the devout on going out or coming in: the Chaldeans generally make the sign of the cross, but Már Shim'ón, when prayers were said at Júlámerik, observed no such form.

After breakfast we went to the church at Dúrí: like the rest, it presented to our examination only a rudely constructed and vaulted building of stone, into which but little light was admitted by apertures more like loop-holes than windows, perforated in the upper part of the rear gable-end. The altar was at the east end, and beyond it was a recess for the communion-table, approached by a low door: the whole apparatus of the church service consists in a copy of the Liturgy and of the New Testament, a brass cross, a bell to ring, an incense vase or chafing-dish, and a cup for the administration of the sacrament. Generally the interior of the churches are lined with printed calicoes or other ornamental cloths, often very ragged, but as it was time of war these were taken down lest they might attract

parties in search of plunder. There are no seats in the churches, and the men and women stand together; the latter never cover their faces, nor are they in any way debarred from free communication with strangers or friends. The people were free yet respectful in their manners: their curiosity was very great, and became sometimes rather trying on the road. Of arms especially they are very fond, and could never let ours alone, although percussion guns and pistols are dangerous things to play with: there was also no keeping their hands out of our travelling-bags. The men wear their hair plaited in a single tress, which falls from the back of the head: this is surmounted by a conical cap of white felt, which makes them look uncommonly like the pictures given of the Chinese. Their best travelling-shoes are made of chamois-skin, with a strong netting of string, but those for ordinary wear are made of felt and require mending every journey; for which purpose each man carries a large needle in his breast.

We spent the evening with the Bishop. We were in a grove of luxuriant growth and variegated foliage; golden orioles sang from the shades, and pigeons cooed from the rocks above; the men sat round and patted us on the back with the familiarity of old acquaintance, and the women crowded to enter into the passing conversation.

The villages of Chaldeans in Berráwí having priests, are: 1. Bebal; 2. Ankarí; 3. Malaktah; 4. Halwá; 5. Bismíyah; 6. Dúrí; 7. Iyát; 8. 'Ainá Núní; 9. Derishkí; 10. Mayah; 11. Akushtá; 12. Misekeh; 13. Robárah; 14. Dergehlí; 15. Taskish; 16. Besh; 17. Harís: of these Derishkí and Mayah alone have no churches. The Bishop of Berráwí is the only church dignitary in the mountains besides the patriarch Már Shim'ón.

*Monday, June 15th.*—We started early in the morning to visit the iron-mines of Berráwí, in the mountain of Dúrí. We found these mines to be worked on the surface in beds of oxide of iron, disposed parallel to the strata of a fissile yellow limestone dipping W. at an angle of  $26^{\circ}$ . These yellow limestones belong to the upper chalk formation, and the ferroxides (fer limoneux of Beudant) occur in them in beds instead of nodules, as is commonly the case in this formation: these deposits have never been extensively wrought, though sufficiently for the wants of the people. The reason that the Kurdish and Chaldean mountaineers value their mines so much and are so jealous of them, is that what little produce they derive from them they convert to their own use; which is not the case in Turkey in Asia, where the mines are either disregarded or else wrought by government, often in the vain hope of getting gold or silver from them. Hence these mountaineers think that if an intelligent nation had possession of their

mines, incalculable riches might be derived from them, which is quite a mistake : they themselves are only acquainted with five mines in all Hakkárí. I have examined three out of the five, and strongly suspect that none possess such advantages as would make it profitable to transport their ores over the mountain roads. I only wish I could have convinced the mountaineers of this, even half so firmly as I was convinced myself ; how much suspicion and ill-feeling regarding my mineralogical researches I should in that case have escaped !

We had a steep descent from the Túrá Dúrí, and reached a valley nearly filled up with snow, upon which lay a whole grove of trees that had been carried down by a land-slip. The Bishop's residence at Dúrí was at an altitude of 4917 feet ; the crest of Dúrí 5792 feet ; the vale with snow 5133 feet ; from hence we ascended again over rocks of blue limestone to the crest of the Deralíní hills (alt. 5811 feet), from whence we had a prolonged descent of  $1\frac{1}{2}$  hour, at a quick pace, to the village of Gun-duk, inhabited by tributary Kurds. This deep valley reaches down to the banks of the Zab ; it is bounded to the N. by the great range called *Ḳarási Tiyárí*, which forms the western boundary of the *Tiyárí* district, although the outlying village of Gun-duk is tributary thereto. On the S. side of the Zab and opposite to this valley is a well-watered verdant vale, inhabited by the *Chál Kurds*, who hold out against the *Tiyárí*.

During the descent of the Deralíní, Dávud fell from his mule and hurt himself, so that we were obliged to stop a short time at Gun-duk. We had scarcely left this village, and were travelling along the sides of the *Ḳarási Tiyárí*, when a man came running in great haste out of the woods to inquire where we were going, and who we were ; our guides having satisfied him upon these points, we were allowed to proceed. The path or mule-way, for it was never anything more, took us round the southern slope of the *Ḳarási Tiyárí*, where its huge shoulder presses down upon the valley of the Zab. This rapid river rolled along amid impracticable precipices, nearly 1000 feet below us. Its course could be traced for some distance, but, except two narrow and alpine vales, watered by mountain torrents, and inhabited by the *Chál Kurds*, there was nothing but bold masses of rock rising above one another, and increasing in height eastwards to the mountain of *Tsariyá* and the *Túra Shiná*. The *Ḳarási Tiyárí* is composed of micaceous sandstones, becoming very schistose, and passing into rude mica-schists and clay-schists, with quartz rock in beds and dykes. These rocks were sometimes of a red colour, sometimes black from the presence of carbon.

As we opened upon the valley of *Lizán*, or of the *Miyáh Izání* (river of *Izání*), a scene presented itself more interesting than

anything we had yet met with in the mountains. Before us was an alpine range of limestone rocks, stretching E. N. E. and W. S. W., with lofty precipices fronting the W., and in their unsevered rectilinear prolongation appearing to form a barrier against all further progress. There was, however, one gap in this formidable rampart, through which the Zab found its way, to obtain, as it were, a little comparative repose at Lizán, where its bed is wide and less rocky. It is crossed by a bridge of ropes, which at a distance look like a single coil, and on the left bank is the Kurdish village of Jenán, while on the right is the great Chaldean village of Lizán, governed by an old gentleman who styles himself melik or king, but who is under a superior melik of Tiyári, now in the mountains. The cottages of Lizán were not all grouped together, but were scattered among groves and gardens, and being built in a Swiss style, had a most pleasing appearance. A practice also obtained here, which we afterwards found to be general among these people, of sleeping in summer not upon the roofs of the houses, but upon a frail scaffolding of four poles supporting a floor, sometimes small, sometimes large enough to contain a whole family. These bedsteads are from 10 to 20 feet in height, sometimes in the fields, even amid rice-grounds, but oftener upon the crest of little hills, or in places exposed to the wind; by this means they avoid to a certain extent the musquitoes, which abound almost generally throughout Kurdistan.

On approaching Lizán, a person having apparently some authority came out with others to meet us. He received us at first with some distrust, but our country and pursuits being explained, we were welcomed and taken to the roof of a house overshadowed by a huge walnut tree. But we had espied, about half a mile from the village, and pleasantly situated upon the banks of the Zab, a neat whitewashed church, embosomed in a grove of mulberry and pomegranate trees. To this, accordingly, we repaired, and took up our quarters in the burial-ground, refreshed by breezes from the Zab, which rolled by us at a rate of  $6\frac{1}{2}$  miles an hour.

We had not been long seated before the melik made his appearance, an old man with nothing peculiar about him; and shortly afterwards the priest of Lizán, one of the most engaging and best informed men we met with among the Chaldeans. The polished manners, the learning, and the kindly feeling of this man must have been all acquired in the mountains, for he had never been out of them, and if he had he would not have found at Mósul on one side, or at Urumíyah on the other, any examples to profit by, his manners being superior to anything I have observed among the natives at either of those places. Quiet, unassuming, yet intent in his arguments, there was nothing but his dress to distinguish him from an English country clergyman.

They treated us as usual most hospitably, but without meat, which was all the better for us at this season of the year. Here, however, we got some fish, which is abundant in the Izání, into which river it ascends during the time of floods, and is afterwards caught by a dam put across the stream, with openings into little cells having a flooring of basket-work to let the water through. There is always a bad man in every large company, and one dissatisfied fellow this evening got up the old tale of mines and foreign conquests, but we put him down very quickly, and sent him away to enjoy the society of his own sullen self and mind of evil forebodings.

Lizán church was found, by an observation of Jupiter on the meridian, to be in N. lat.  $36^{\circ} 53' 50''$ . There are several roads from thence to the Hakkári country, but all of them have to compass the ascent of the great limestone range immediately E. of the valley. One of them is carried over the side of the Tsariyá Mount, E. of the Zab, but is not accessible by mules. All the rest present great difficulties. Anxious to see as much of the Tiyári country as possible, we proceeded (Tuesday, June 16) up the valley of the Izání, with the view of visiting Ashitah, the largest of the Tiyári villages, and said to contain four churches. We were accompanied by three armed Chaldeans, sent with us by the melik of Lizán, who disappointed us in our objects without making us aware of the fact, till too late to be remedied.

At a short distance beyond Lizán we passed the village Mini-yání, divided into two parts, upper and lower, about a quarter of a mile from one another; and 3 miles from the same place the village of Umrah, beyond which, 1 mile, was Zawithah. The whole valley presented beauties equalling anything in the Alpine districts of Europe. Beyond Lizán the valley begins to rise, the river flowing through a ravine below; but above this, and at the foot of the stupendous cliffs which guard the valley, is a shelving portion of declivity, which is everywhere cultivated, overgrown with trees, or studded with the pretty cottages of the mountaineers. Every available plot of ground is cultivated in terraces, rising one above the other, and the rocky interval that separates them is covered with fruit-trees or tall poplars for building. The system of irrigation practised on these terraces is very perfect; I counted twenty-five terraces sown with rice, the most common crop, all under water at the same time. In the middle of the valley the cultivation and cottages are mostly on the S. side, and above the level of the river (Izání), but higher up they occupy both sides equally, and extend to the banks of the stream. Cultivation attains its greatest altitude at Zawithah. The village churches—edifices of simple structure, without tower or steeple, but neatly

whitewashed—are generally built on some eminence or slight elevation of ground. Umrah has two of these, both occupying picturesque situations. The little wooden platforms for night-rest are sometimes disposed, eight or ten in number, round an enclosed but uncovered space, where in summer-time the family or families meet together at sunset, and converse previous to retiring.

At Umrah we commenced the ascent of the mountain. The heat of the sun rendered the toil most severe. In one hour's time we reached the foot of the cliffs, the mules working up behind; we then turned along the face of the precipice near its foot. The road was so bad, that we had twice to load and unload the mules; at length we reached a gap in the rocks which led us to a vast growth of fennel, which announced proximity to the snow line. A number of peasants were occupied in cutting this useful plant, which constitutes the winter stock of cattle provender. When green it is chopped and put into sour milk, to which it gives a pleasant aromatic flavour. Two species of fennel abound here, and it is remarkable that they respectively favour opposite sides of the mountains. With them grow *Alchemilla alpina*, *Trifolium alpestre*, *Stachys alpina*, and a *Lobelia*. We had not yet, however, attained the beautiful Alpine vegetation which we were afterwards presented with. These heights were now arrayed in their most attractive green, and the relief to the eye was very great. The crest of the Kuríkí, the mountain we were now crossing over, leaving Ashitah to the left or W., was 7652 feet in elevation; the culminating point of Kuríkí, clad with snow, must exceed 8000 feet in height. The descent was still steeper than the ascent, and rendered difficult by the nature of the rock, a slaty argillaceous limestone, which dipped parallel with the slope of the mountain, leaving smooth surfaces to slide over, and it was impossible to say sometimes how far these slides might be carried. On the side of the hill, not far from its base, is a rude rock called Taraspino, into which a gallery is pierced for working an apparently promising vein of galena, but it is only wrought when there is a demand for bullets. The veinstone was barytes, and I got some pretty crystalline calcareous spar; the forms, however, were not uncommon. Madrepores abounded in this limestone.

I arrived at Taraspino, a large village at the foot of the mountain, with a Greek servant, who is a good pedestrian, about an hour before any of the remainder of the party. Having saluted the peasants, and partaken of some sour milk brought by the women, I went, before a crowd could collect, to the forge, which consisted of a small single furnace without chimney, but with bellows of adequate size. The crucible would not hold above

20 lbs. avoirdupois of metal; and it is evident that it is only smelted for bullets or some other such purpose. The lead is not oxidated for silver, as there was no furnace for the purpose.

Soon after the arrival of the party the whole village, men, women and children, crowded round us. They willingly gave us specimens of ore, yet to my surprise the guides declared this a bad village, and that we must go on; I believe it was owing to our Mohammedan muleteers who had been threatened.

We accordingly started for another range, formed of quartz rock and schist, and gained the crest after little more than an hour's foot work. We then continued along the side of the hill, over several snow patches, and above the valley of the Zab. Mr. Rassám and Dávud began to give me uneasiness, as they were far in the rear and had several tumbles; Mr. Rassám was complaining of his chest, from which he afterwards suffered much, and it was growing dark. At length, just after sunset, we came to a summer pasture around a great patch of snow, called Zómá Suwarrí. There were a few peasants here, and we drew up and waited for stragglers, spending a night of a most agreeable and invigorating temperature at an altitude of 7169 feet by boiling-point thermometer. The shepherds had with them some specimens of the fine mastiff of Kurdistán, which in outward appearance very much resembles the St. Bernard's breed, but is more shaggy.

There is a road carried across the mountain at a lower level than the one we were at present following, and which is only available during a short season of the year. Upon that road a monastery was built some years back for the entertainment of travellers, and a certain sum of money was given by the Chaldean church towards its erection. But a melik, by name Melik Khiyo, in whose district was this charitable institution, was found guilty of perverting the funds placed at his disposal to his own advantage, and came under the displeasure of Már Shim'ón, apparently for other evil doings, so far as to be excommunicated from the church. He is now in consequence at enmity with Már Shim'ón, and hearing that some Franks were upon the road to visit the patriarch, he concluded, as is customary in this country, that we were bearers of presents, which he resolved to appropriate to himself. The plan he adopted was to send two armed men, who met us on the road next day, and with many polite words expressed their astonishment at our having come so difficult a road, regretted our fatigue, requested that our guides should be sent back, as they would now see us safe to a place of refreshment, and thence across the mountains. These kind proposals not being accepted the argument was changed, and the conversation was more particularly directed towards the guides, who were



told it was better for them to return, as the melik was determined to fight us, and they might come off badly. They, however, remained firm to their post, and we heard no more of the matter.

The prospect from the Zómá Suwarri was very grand, the rock scenery being hold and various. To the N., range after range of rugged mountains succeeded one another like giant walls so rapidly as to make it inconceivable how such a country can be penetrated. Five different ranges presented themselves between us and the snow-clad uplands of Júlámergi and the head-waters of the Zab. To the S. were all the long crests of rock we had toiled over, the summits of Túrá Shíná and Kuríkí rising over all; and after all our labour the gap by which the Zab found its way into happy Lizán appeared quite close to us, but at a depth that diminished the trees and buildings into points pricked on the rock's surface.

*Wednesday, June 17th.*—Our road still lay along the side of the mountain, the snow was more abundant, and the slope often very steep. Those who got over first stopped to laugh at those who came behind, for the falls were even more ridiculous than dangerous. In one place the mules had to pass under a waterfall at the head of a glacier, when their burthens were well wetted—on two occasions they had to be unloaded. It was on the side of this mountain that we found waiting for us the persons before alluded to. A little below was a Zómá, sprinkled with the large bright blossoms of the crocus alpina and azalea procumbens, besides several species of squill and the clustered umbel of a spiked ornithogalum and common blue hyacinth.

We observed on the sides of this mountain a considerable change in the vegetation, indeed we found almost every range more or less characterised by the preponderance of certain forms over others, and the vast numerical increase of a few social species. Here three species of plants excluded almost all others; they were the *Astragalus tragacantha* (great goat's thorn), *Tragopogon orientalis* (goat's beard), and *Rhamnus saxatilis*, the berries of which are used by the Easterns to dye leather yellow. It must not, however, be confounded with the yellow berry of commerce, which is the produce of *R. catharticus*. Goats and sheep feed upon all these plants, as did also our mules; and flocks were numerous on these well-clad hills. It is remarkable of the *Tragopogon orientalis* that its geographical distribution is very various, and that though abounding on the plain of Adiabene, it yet does not cross the Tigris. Its white stem when first pushing out in spring is abundant in the market of Mósul, where it is brought from the plains E. of the Tigris; and, although wild, it is incomparably the best vegetable which this country affords. The stem

makes a pleasant salad, and in the mountains is peeled and eaten raw.

On our descent dwarf-almond and *Azalea procumbens* became abundant. We got down to the valley of Ithá by means of a glacier or snow-patch, about a mile in length by 300 yards in width. It sloped more gently than some preceding ones; and although perforated by a mountain-torrent it bore mules and men in safety, and with our shoes off we could run or slide down, which was a great relief after the continued stepping from rock to rock. The valley of Ithá is beautifully situate, being encircled on the N. by lofty snow-clad mountains, the Tusání Túrú, the rocks of which dip N., while they present bold precipices towards the valley. There are here three villages—Ithá, Pír Beka, and Galithá. After stopping a short time at Pír Beka, where we got our favourite dish of boiled wheat in sour milk, we proceeded down the valley of the river of Ithá to the bridge which is opposite to Galithá. The torrent (for it was nothing else at this season of melting snows) was there 15 yards wide by 5 to 6 feet in depth. The bridge was ingeniously made of wicker-work.

From Galithá we commenced another ascent almost as fatiguing as that of the Kuríkí. Half way up this ascent I had the curiosity to pass with the water-course through the heart of a glacier for about 600 yards, when I reached the other side; the effects of light and shade within this icy tunnel were beautiful, and the fine expanse of marbled arch was pleasing to the eye, but it was like walking in a drizzling rain. In winter-time the inhabitants here descend the mountains on sledges of very simple construction: a single piece of wood slightly concavo-convex, or boat-shaped, has a deep notch in front, to which a cord is attached, and the navigator pulls hard in the direction opposite to that in which he is going; still he must exceed our railways in speed when launched upon an even declivity of snow with a slope of from 15° to 20°.

Having gained the crest, we had nothing to do but to descend another glacier, and it was the work of a few minutes to lose the elevation which it had taken us upwards of an hour to ascend to. We then found ourselves in an alpine valley, overgrown with fennel and a rank, marshy vegetation, at the lower part of which was the village of Malótah, where we passed the night, much against the will of our guides, as the inhabitants were Kurds. These people were in extreme poverty, living almost entirely upon wild plants. We could only get from them the stem of the fennel, gathered just as it issues from the ground near the snow-line, and stalks of rhubarb, the acidity of which, however, was very pleasant and refreshing. They had lately killed a bear at this village; the skin measured 6 feet 4 inches from the snout to

the stump of the tail, and the fur was of a dun-grey-colour, whitish beneath. We also saw here horns of the wild goat.

This valley, at an elevation of 6200 feet, was partly cultivated, partly covered with snow, and the remainder overgrown with a rank vegetation, more especially of umbelliferous plants; among which, however, were a few beautiful flowering plants, as crown imperial (*Fritillaria imperialis*), pæony, and asphodel. The waters of this little alpine valley found their way out by a narrow and deep glen in limestone, and then tumbled along to the valley of the Zab.

*Thursday, June 18th.*—The ascent to-day was not so steep, and in some parts we could mount our mules. The hills were also now wooded with fine oak; and gaining the next crest (Warandún), we found ourselves immediately above a summer pasture with a large patch of snow, whereon was now encamped Ismael, chief melik of Tiýarí. The descent was steeper than the ascent, and extended about 800 feet. The only tent in the Zómá of Warandún was that of the melik; all the rest were huts made of branches, and there was an aspect of poverty in all things, and nothing plentiful except milk. A few cross-sticks were quickly set up and a carpet spread over them for our accommodation. It was some time before his Majesty the King of Tiýarí made his appearance. He at length was seen slipping out of his tent, and encompassing our carpeted mansion. He came as if from an opposite direction, entering with an air half of pleasure, half of surprise. He had evidently been dressing, and was clad in a new cloak of scarlet cloth and wine-coloured inexpressibles. As many as the little tent would hold crowded in, and our position became extremely irksome. King, travellers, soldiers, peasants, muleteers, were all crowded or rather jammed together. It was with difficulty that space was made for a repast of rice and sour milk that had been hospitably prepared for us. The conversation turned chiefly upon mountain-politics, as the Melik's mind was evidently quite absorbed by the appearance of the Turkish troops at 'Amádíyah. He said he was also threatened on the side of Ván. But we afterwards found that he had exaggerated this. He appeared to be well affected towards Ibráhím Páshá, from whom an emissary had lately visited these mountains. He also spoke favourably of the condition of the Christians under the Russian rule. He was not a man whose countenance expressed much firmness or vigour of character. Tall and of spare habit, he appeared to have given himself a good deal up to domestic comforts, and to have foregone the elasticity and energetic movements of the mountaineers, and in point of judgment and intelligence he was far inferior to the patriarch of the Chaldeans.

Similar customs existing among people geographically remote

from one another, independent of their importance in tracing the early distribution of nations, always excite interest, especially if connected with certain physical circumstances. A pleasing reminiscence of other alpine countries was afforded to us here by the general custom of wearing an eaglet's feather in the cap, the son of the Melik being alone distinguished by a dark green cock's feather, such as is worn in Tyrol.\*

Leaving the Melik, who expressed himself disappointed by our present, although we thought we had been uncommonly generous, we descended another thousand feet through a thick forest to the valley of Kiyáú, where we pastured the horses while I examined a neighbouring lead-mine. There was, however, only a shaft of a few feet in depth, and that not being at present worked, I could not ascertain the thickness of the vein. It occurs in a slaty yellow limestone belonging to the upper chalk formation. Most of the lead here is gathered from the water-courses in small pebbles, as the tin is in some of the mines of Cornwall, only the fragments are less round.

There are two villages at Kiyáú, the upper one Mohammedan and of tributary Kurds, the lower one Chaldean and with a church.

In the parallel of Kiyáú, or rather a little below it, and at the foot of Warandún, the Zab is divided into two branches of very nearly equal size; the southerly branch comes from the country beyond Júlámerik, the northerly from Leihún and that quarter. This latter is called Berdizáwí or Little Zab. A huge mountain-mass called Meskannah extends between the two rivers.

After a short ascent over yellow and fissile limestones, we travelled along the banks of the Berdizáwí, sometimes over cliffs of conglomerate which overhang the river, and down which one of the mules had a fall, but was luckily held up by the trees and recovered without any hurt. In little more than an hour we came to a torrent which descended from a lofty and snow-clad chain to the west called Máranán.† It was 13 yards wide by 2 in depth, and crossed by a bridge of interwoven branches as usual. Near the same point was also a bridge over the Berdizáwí, and a little cultivation, but no village.

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\* The Melik, observing that I had been collecting plants, sent a man who brought me a gorgeous specimen of a scarlet cypripedium, which grew in shady places near the snow-line. My only botanical work (Loudon's *Encyclopædia*) does not mention a scarlet species of this interesting genus.

† This name is apparently the same as that of the Metropolitan, called by Major Rawlinson (*Journal of Royal Geographical Society*, vol. x. p. 103) Maranan, evidently meant for Már Hannan, the Metropolitan of Adiabene, who, at the beginning of the ninth century, withdrew a large part of Kurdistan from the ecclesiastical jurisdiction of Azerbiján, and annexed it to the bishopric of Salak, which, according to Major Rawlinson, was the name applied formerly by the Syrians to the Kurdish mountains between Media and Assyria.

Beyond Máranán river to the N. are two rocky ranges of limestone, which, with the characteristic peculiarity of that rock, tower up in lofty precipices, in this case fronting the W., while the strata dip E. The most easterly and most lofty of these ranges is called Sináber, and beyond it is the upland of Leihún. We crossed the first and lower range, when a curious arrangement of rock presented itself. The lofty precipices of limestone to the N. and S. fall away to the same point in the E. Starting towards it from nearly equal distances, the cliffs begin to lower and to recede at the same time, till they meet in a point over which the Berdizáwí throws itself with a roaring noise and a cloud of foam and spray. I regret that our road did not conduct me near enough to examine in detail or take measurements of this great waterfall. Turning to the N., the path led along the foot of the cliffs and then up rocks like steps, so that on approaching the crest of the Sináber, I found myself separated from the river by several tiers of rock-terraces, presenting so many inaccessible cliffs.

On the upland of Leihún we found the Berdizáwí divided into three branches, all which unite shortly before the gap in the rocks. The most westerly is the smallest, being only a few yards in width; the second comes from the N.W., and was 20 yards wide, and very deep, but its channel much filled with boulders; the third came from the N. 30 E., and was 22 yards wide, and from 4 to 6 feet deep. We crossed all these streams on bridges of twigs: they rolled beneath with the noise and rapidity of mountain-torrents.

This upland is inhabited by the Kurdish tribe of Leihún, under the beg of Júlamerik. Many villages, with much cultivation, are scattered around. We crossed the river, and turned rather to the S.W., to the village of the beg. A short time after our arrival, this worthy governor, a fine but ferocious-looking old man, came to us on the roof of his house, and, without allowing any interruptions, addressed us in pretty nearly the following amiable strain, omitting the *salám*:—"What do you do here; are you not aware that Franks are not allowed in this country? No dissimulation! I must know who you are, and what is your business. Who brought these people here?" turning round in a haughty, peremptory manner. "I," said one of the Chaldeans, laying his hand upon his breast in an undaunted manner. He turned round again, and said, more deliberately and quietly, "You are the fore-runners of those who come to take this country; therefore it is best that we should take first what you have, as you will afterwards take our property;" and he turned to his followers for approbation, which was grinned forth fiercely. Taking advantage of the *hiatus*, Mr. Rassám endeavoured to put in some peaceable sentences, and ultimately got the old man into a better humour.

After a time he got up to go away; then turning towards me, who had been all the time sitting under a tree, where I had gone to take a few notes—an employment I was soon obliged to give up—he said to Mr. Rassám, “You are social; but who is that proud brute in the corner?” I laughed at him, and he walked pompously away. At night the mules were huddled together, and each in his own way prepared against an attempt at robbery, not so much from the old chieftain’s braggadocio as from the whisperings and signs we observed going on among his followers; but nothing came of all this noise. The Chaldeans said that if he had robbed us, the Tiyári, as we were under their protection, would have punished them for it; but I think they did not like the risk that would have attended upon the attempt; for there were five well-armed men in our party, besides five slightly armed.

*Friday, June 19th.*—From Leihún the direction of our travels was altered: the same previously-described remarkable peculiarity in the configuration of the country which had so much influence upon its hydrography affected also the lines of communication, and instead of travelling nearly constantly N., we now turned to the eastward, over the upland of Leihún, and low ranges of hills. The temperature was so low as to feel actually cold; and as we went eastward the river of Leihún was seen flowing through pastures, as a quiet stream, and no longer a roaring torrent. Far away to the N. was a Christian church, called Már Ghiyórghiyó Karkál, much revered by the Chaldeans, as the tomb of a holy person who made many converts; and at the head waters of the river was the snow-clad chain of Pára ’Ashín, which stretches in front and beneath the loftier Erdísh Tágh. Passing over a range of hills, rising no great height above the upland, we descended to a cultivated vale, with houses and gardens. This place is called Eslayá. The inhabitants are Kurds, but very poor: they said they had not tasted bread for forty days. We certainly could get nothing from them, so we made a breakfast upon a salad of young vine shoots.

Near Eslayá (6258 feet in elevation) we entered upon the first granitic district we had met with in the mountains. These rocks presented the usual large and small-grained varieties of grey and pink colours. They show themselves first on the upland, at an elevation of 6000 feet, but soon rise up 1000 feet above that, in bare, rude masses; and their prolongation apparently forms the Túrú Jellú of the Chaldeans, and Jáwur Tágh of the Persians, the loftiest chain of Kurdistán. In the marshy spots, such as are frequent in granitic countries, there was a brilliant vegetation, more especially of *primula auricula*, of which the peasants made bouquets to present us with. *Caltha palustris*, *Pinguicula alpina*,

*Veronica aphylla*, *Epilobium alpinum*, and many saxifrages; euphorbiæ, carices and grasses also abounded.

Another ascent with a snow patch brought us in view of Júlámerik, bearing N. 80 E. The first appearance prepossesses the traveller much in favour of a town so beautifully situate. The castellated part consists of a massive building, the residence of the beg, to the E.; a central square court, with round towers at the angles, and a few stray houses irregularly detached, occupies to the W. the crest of a low cliff, which rises with precipitous sides from out of the collection of mud hovels, about 200 in number, that nearly encircle the castle hill, and constitute the town of Júlámerik. In other respects it is situate in a deep hollow, on the Kurdistán upland, being at an elevation of about 5400 feet, and in a ravine, by which the rivulets of the district—of which there are many—find their way into the Zab, flowing immediately below. To the E. is a bold rocky mountain, called Shembat, which is at least 3000 feet above Júlámerik; and beyond rise the still loftier summits of Jellú or Jáwur Tágħ; the highest mountains of this part of Kurdistán, and probably only equalled by the Máranán mountains: the nearest of its summits to Júlámerik is called Galilá. To the S.W. rises a rock of limestone, about 600 feet high, bearing a ruined castle, designated Kal'ah Bawá. Around, and especially to the N. and N.W., is seen cultivation, with a few villages: we descended to one of these, called Merzin, and thence sent off a guide to announce our arrival to Már Shim'ón, and await his disposal of our persons. The patriarch was at that time acting-governor at Júlámerik, or Jemár, as it is called by the Chaldeans, the Kurd beg having gone to Básh Kala'h to meet an envoy from Háfiz Páshá. Had he been at Kóch Hannes we would have waited upon him at once; but we were too well aware of the jealous disposition of the Kurds at Júlámerik to create impediments in our own way, by doing anything that might cause either a feigned or real distrust on the part of the patriarch. Már Shim'ón sent back for answer, as might have been foreseen, that we had better not come into Júlámerik, where all our motions would be watched, and no private conversation could be indulged in; but his brother would receive us at Pagí, an Armenian village, close to the town, and where he would visit us next morning. We were accordingly soon installed in the yard of the Armenian church, from whence, as it came on to rain, we retired to the vestibule, where the people for two days had the extreme satisfaction of worrying us till we had nearly lost all patience. We were never for one moment, night or day, without a number of men around us, whose only amusement was to examine all our things, to pass jests, and fling epithets of scorn upon their visiters. I was not allowed to take any notes, being

carefully watched night and day. We did everything in our power to conciliate these rude people, by rendering them various services, but to no purpose; nevertheless I obtained a few astronomical observations at night, effecting my purpose under pretences which insured me a few minutes' privacy. By two meridian passages of Jupiter and one of the moon, Pagi church is in N. latitude  $37^{\circ} 8' 53''$ : its elevation is 4880 feet.

*Saturday, June 20th.*—Már Shim'ón came to us at five in the morning, and conversation lasted till  $1\frac{1}{2}$  p.m., fasting, I suppose, to preserve clearness of understanding. The patriarch, however, told us, by way of apology, that his brother, who had been with us on the previous evening, was not at his own home, but a guest.\* Már Shim'ón is in every respect a fine man, in the middle of life, tall, strong, with a capacious forehead and intelligent countenance. He was, however, evidently timid in regard to the Kurds. Our presents, consisting of modest luxuries, scarce in the mountains—such as calico, boots, olives, pipe-tops, frankincense, soap, snuff, &c.—were, to my amusement, displayed in public by Dávud, everybody offering an opinion upon the value of each item. The patriarch's good manners did not prevent his letting us know that a watch would be acceptable.

But, with these trifling exceptions, our conversation was of the most interesting kind, and the patriarch felt and expressed the greatest anxiety to enter into friendly communication with England, and to avail himself of the kind interest felt in the education and moral and religious improvement of his people by many of the inhabitants of Great Britain. At one time he retired to hold a consultation with his brother, but it was of short duration, and probably related to the feelings with which the Kurds might view such an alliance, but a moment's consideration sufficed to convince them that it was not of a nature to interfere with local political arrangements; and that, at all events, they were always in a condition to assert their own free will, and to maintain their religious and national rights. These subjects having been all discussed at length, Már Shim'ón took his departure for the castle of Jemár, his brother remaining to keep us company.

*Sunday, June 21st.*—It may be said that the consideration of the moral and religious condition of the Chaldeans only remotely affects the interests of geography: but as the Society has expressed itself in the Instructions as by no means insensible to the importance of this object of our research, I shall here introduce, as

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\* It is worthy of being recorded as an act of kindness, amid so much rudeness, that next day (Sunday) an early but simple repast was brought us; and all we could learn was that it came from a widow who had lately lost her husband. After our first interview, however, with the patriarch, plenty of provisions were regularly sent us from the castle of Júlámerik.



briefly as possible, a few remarks upon these people, in the hope of drawing attention to what I consider as the leading consideration in all attempts that may be made to ameliorate their condition. Writing to the Royal Geographical Society, I may be allowed to notice a speculation respecting the influence of physical circumstances on man. It has been advanced by the most eminent traveller of the present age, that certain climates, more especially alpine districts, where but a brief interval of sunshine alternates with storms, and where the ruggedness of nature begets sternness and moroseness in mankind, are most favourable to the propagation of a religion of asceticism and monastic seclusion. But here, in the heart of Kurdistan, where snow-clad rocks perpetually frown down upon secluded vales—where giant precipices seem almost to defy mankind to venture upon intercommunication—where waters, instead of meandering through flowery meads, pour in resistless torrents over their stony beds—where clouds, unknown at certain seasons in the plains, almost perpetually obscure the fair face of the heavens or dwell upon the mountain tops—and where the universal aspect of nature is sterile, forbidding, and austere—the benign influence of a kindly religion, and the simple forms of a primitive church, have preserved a people from self-sacrifices, unavailing to God and injurious to society. The Chaldean church neither inculcates seclusion nor celibacy among its clergy; its only purification is fasting, so strongly enjoined all Christians; and, in order that in this point their bishops—whose dignity is hereditary—may be without stain, they are not allowed to partake of flesh-meat either before or after their ordination.

But if the influences of climate and soil, combined with the peculiarities of position with regard to neighbouring races of men, on the moral and intellectual development of the Chaldeans, are modified in one direction by religion, it is much to be regretted that in another they have exercised full sway, allowing the passions too frequently to obtain the ascendant over morality and religion. The hardy mountaineer knows but a single step from the toil of travel, the hunt of the chamois, or a combat with a bear, to an expedition for plunder, or to civil war and extermination.

Thus the character of the Chaldean, besides perhaps retaining the impression of early persecutions, has undoubtedly been affected by position, by the influences of nature, and by the vicinity of warlike and predatory tribes, maintaining hostile creeds, but it is still more influenced by a very simple and easily remediable defect, namely, that with the forms and practice of worship they are not taught to understand the gospel.

In a country where none can read but the priests, it is most

essential that attention should be given to the instruction of the people in the humanizing precepts so characteristic of, and so peculiar to Christianity. It is not the fault of the laity, for they are regular attendants at church, but of the priests solely, who partly chaunt and partly mumble through a liturgy of great beauty and excellence, and through the ennobling lessons of the New Testament, in so unintelligible a manner, that no practical advantages can be derived from them. And it is to be remarked here that the old Chaldean in which the liturgies and Testament are written differs also much from the Chaldean dialect at present used by the mountaineers. Certain prayers are familiar to all, but they have little moral effect. Many persons piously disposed retire to a corner of the church to pray in privacy, and I have often observed that such persons adhere also to the old Oriental practice of frequent prostrations, a form not observed by the clergy: but there is no plain distinct enunciation of the precepts and practice of our Saviour or of his Apostles. There is no sermon or lecture to expound difficulties of doctrine, to awaken reflection, or to sustain faith by convincing the intellect: thus the main body of Chaldeans are only nominal Christians, and must remain so till assistance be sent to them from more favoured nations. Left to themselves and without education the people have deteriorated, and with the carelessness and ignorance of the laity have come laxity and superficiality among the clergy, an attachment to forms with a disregard to substance.

It would be a great injustice, however, to these mountaineers were I not to acknowledge that they are superior in intelligence and in moral worth to the inhabitants (Christian and Mohammedan) of the same classes in Anatolia, in Syria, and Mesopotamia. There are some forms of society and many decencies of life belonging to improved civilisation that are omitted by the mountaineers; but, leaving out exceptions, there is no doubt that they are, as a race, more quick and impressible, more open, candid, sincere and courageous than the inhabitants of the before-mentioned countries. Their bearing is erect, but without the swagger of the Turk; their eye firm, but without ferocity; their forehead ample and high, unclouded by suspicion and evil feelings.

But this slight superiority over neighbouring nations gives them no claim to be looked upon as a people enjoying all the real benefits of the church to which they belong; their general demeanour and tone, their implacability towards their enemies, and many points in the daily conduct of life, are not only not consonant with, but are severely reprobated by, the religion which they profess to follow. The origin of the demoralization and of the

religious and intellectual prostration of this remarkable people was beyond the control of man, and was primarily connected with those many revolutions with which it has pleased the Almighty to visit eastern nations; but the present existence and continuance of this state of things is evidently to be attributed to the want of communication with other nations, and to the neglect of education among the clergy as well as the people; and it is sincerely to be hoped that the same day that these facts shall be clearly felt and fully appreciated, will see commence the future regeneration and humanization of one of the most interesting and most remarkable, yet little known people, that are to be met with on the earth's surface.

It is an agreeable reflection that the power to rectify their error, if any such exist, lies with themselves, and that they are therefore open to the best and surest means of doing good—friendly and brotherly advice, offered by one who never (as an esteemed authority writes) considers those corruptions as heresies which do not actually tend to destroy the Christian faith. The exercise of such liberality is truly labouring not to increase the power of any particular sect, but to unite the Church throughout the world in brotherly love and sound doctrine.

The Patriarch of the East, who in the time of Assemani had twenty-five metropolitans and upwards of 200 bishops, has now only one metropolitan, Andisho Andishiyah, or Ishiyah, metropolitan of Berráwí, and four bishops, viz., Már Yumna, bishop of Gawílen, Már Yúsef, bishop of Dahara, Már Iliyás, bishop of Gúj Teppa, Már Gabriel, bishop of Ardishar,—all in Persia. The dignitaries of the Roman Catholic Chaldean church have been already enumerated; it is remarkable that Assemani states that the Patriarch is elected by a council of metropolitans and bishops convened by the sees according to their priority, while Mr. Rassám assures me that the office is hereditary, and so far as succession in one family is concerned, this is also affirmed by Dr. Walsh. It appears that the nephew generally succeeds the uncle.

*Monday, June 22nd.*—This morning we left Pagí, on our road to Básh Kala'h, or the "castle at the head" waters of the Zab. We had a gentle ascent up the shoulder of Túr Burju-llah, which lasted nearly 2 hours, and then descended to the valley, or rather upland, of Kóch Hannes, a small village upon a level upland vale, advancing over the valley of the Zab, the residence of Már Shim'ón. A servant came out from the village and brought us presents of flowers and a repast. Some of the Kurds of Júlámerik were in their tents at their summer quarters in this valley, which is watered by a great number of torrents, supplied by the snows of Burju-llah.

We rode some distance along the sides of Kóch Hannes hill, having a higher range, that of 'Areb Tágh, before us. We then descended by a long and steep, though otherwise good, pathway, to a valley in which were many villages and delightful groves, with a varied and abundant vegetation. We then ascended again to a cultivated upland at the foot of 'Areb Tágh, where were the Chaldean villages of Espín and Gharánís, both having towers of defence against the predatory expeditions of the Kurds; and the latter was a good specimen of the poorer class of Chaldean villages—small, but with a bold look; poor, but religious: the inhabitants of five houses had two churches and one fort.

The prospect from Gharánís, where we spent the night at an altitude of 7009 feet, in a temperature of 40·4, or only 8°·4 above freezing point, was very beautiful. The quantity of water poured down by the mountains around is very great: in travelling, scarcely has the din of one torrent begun to diminish when another breaks upon the ear. Cataracts in rivers or rivulets generally display some geological phenomena, such as differences in the structure of the strata, the crossing of a dyke of igneous rock, &c. Here they exhibit the effects of contrasted configuration. Three different torrents poured in lofty falls over the side of Kóch Hannes Mountain, to unite in one stream before reaching the valley of the river of Espín. The outline and forms of the mountains which constituted the lofty chain of Túrú Jellú, or Jáwur Tágh, were never so distinctly seen: I could take bearings to all the chief points, which, if not the highest, are by far the most steep and rugged of the Hakkárí Alps. There are four or five abrupt, truncated, culminating points, between which are ridges of sharp pinnacles, rising like sky-towers, and overlooking deep and precipitous ravines filled with their vast deposit of perpetual snow, the grave of waters gone to rest. The silver crest of the lofty but less serrated peaks of Máranán also extended to the N.W., the sun's setting beams lighting up their long continuous summits like a great icy coronal set upon the sea of silent hills, which filled up the remainder of this beauteous landscape, and which we now felt loath to leave, still more so from the prospect of a burning plain before us; but we remembered that we had still to cross the same chain—still perchance to breathe freely on the summit of the peak of Rowándiz.

*Tuesday, June 23rd.*—There are two roads from Gharánís, one over the mountains, the other by the valley of the Zab. We took the latter, although the longer, in order to visit some sulphur-mines said to exist there, and to avoid the Artúshí or Ardúshí Kurds, who were not well spoken of.

We made two slight ascents and descents before we came to the sulphur deposit. This we first met with at the bottom of the

valley; it consisted of sulphur mixed with blue lime shales, sometimes granular, but mostly pulverulent. The second deposit was, half a mile beyond, in breccia of blue limestone, between the fragments of which was a small quantity of crystalline sulphur. Neither of these deposits were of much importance, from their extent, but geologically they resembled much what is observed in the plains of Mesopotamia. A warm spring, emitting hydrosulphurous acid, also occurred in the vicinity. We passed the Chaldean village of Kermí, and then turned off from the valley of the Zab, which was here both rocky and beautifully wooded, to the N.E., passing a valley with two more Chaldean villages.

The outline of the mountains had now become less rugged, the uplands were more lofty, and the chains more continuous. We met in our road with a well-armed caravan of mules going to Júlamerik. By the road-side grew large golden poppies; and, where marshy, *Britomus umbellatus*. In the evening we followed for some time the valley of the Zab, where it winded through a marshy upland vale; at the end of this it received a large tributary, which we crossed by a bridge: it flowed from N. 80° W. Ascending an upland a little above the Zab we reached the Chaldean village of Meílawa. These Chaldeans are subject to Básh Kálá'h, and no longer claim the distinction of belonging to a tribe.

The country towards the head waters of the Zab beyond this quite changed its characters. There were still a few mountain points, as Arghí Tágh,\* to the S.E., with a bold outlying rock, called the "Rock of Fire." To the N., between Básh Kálá'h and Lake Ván, was the Erdísh Tágh; but the outline of the chains is now tame

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\* This is the Múz Tágh of Colonel Monteith's map; and it appears barely to rise from 1500 to 2000 feet above the valley of the Zab, where the latter is about 6400 feet above the level of the sea; so that the mountain attains an elevation of 8400 feet. Monteith marks 9000 feet; probably from actual observation of a crest E. of that which was visible to me, and which constitutes the summit level between the head waters of the Zab and the upland of Urumiyah. Compared with the observed elevation of Sheikhiwá, I should think Colonel Monteith's observation rather in excess, and it appeared to me that none of the snowy mountains of the districts of Berádúsh, Burdasúr, and Kaniresh, which bound the upland of Urumiyah to the W., attain an elevation exceeding 9000 feet; the mean height of the crest being 8400 feet, or 4000 feet above the plain of Urumiyah. The Túrú Jellú, or Jáwur Tágh, towers over the range considerably, and advances beyond it to the W. But it would be requisite to extend our researches further S., along the Kandilán mountains and Sardúsh country, in order to determine the loftiest summit between the Múz Tágh and the Zagros. I think, however, that there can be no doubt that the peak of Rowándiz has no rival in the easterly chains of Kurdistán, and it is in these that it is situated. Notwithstanding the evidence of Monteith's map, it appears quite certain, from the size of the rivers flowing from this easterly chain to the lake of Urumiyah, more especially the Náz-lú, the Suhúr, and the Burránduz, that they originate in the Túrú Jellú, and flow through this chain; indeed, the transverse valleys of the two last-named rivers are quite evident from the plain, while some large tributaries probably flow from the western side of the Jellú to the Zab, in the interval between the country of the Tobí Chaldeans and the Zibará Kurds.

and rounded, the ranges being neither serrated nor boldly defined, and rising so little above the level of the upland as to have the appearance rather of hills than mountains. But the generally Alpine character of the whole country was rendered sensible by a variety of prominent features—the bleak and bare aspect of the soil—the little cultivation, and that so tardy—the reluctant vegetation of coarse grasses and sedges—the hardy and ligneous character of the perennial species of plants—and the waters flowing towards the lofty chains to the west—spoke of their altitude in language as strong as the diminished pressure of the atmosphere, whether indicated by the length of a column of mercury or by the low temperature of the boiling point of water. Meilawa, by the latter indications, was at an elevation of 6418 feet.

*Wednesday, June 24th.*—Our road still continued up the open valley of the Zab:  $2\frac{1}{2}$  hours brought us to where two streams meet; the one from the mountains beyond Básh Kala'h, the other from Kandá Kilissa. We soon came in view of Básh Kala'h, about 2 miles to our left. It is a large village, distributed round the base of a more conical hill than that of Júlámerik, and, like it, supporting a castle. It is said to contain 200 houses, inhabited by Kurds, Jews, and Armenians. It is governed by an officer of the Beg of Júlámerik, and is tributary to the Páshá of Ván.

At one part of the valley of the Zab some rocky ridges of yellow limestone come down close to the river's edge, which they shut up in a narrow glen. There are no less than three different castles, square courts with towers at the angles, commanding this pass. Two are in ruins, but one, Kala'h Karání, is still in good repair. Our guides this morning had been a good deal disturbed by the appearance of six armed Kurds, who followed us for three or four hours, always keeping, however, out of shot. This was an advantageous place for an attack on our small party, for our three Chaldeans had left us at Júlámerik, and been replaced by a peaceful, talkative priest, but nothing was attempted. Keeping still up the valley of the Zab we came to an ancient Armenian monastery, well built, with sloping roof, and bell-towers, containing two bells, regularly rung at service. It is curious that the Armenians, who are dependent, should have preserved this custom, while the Chaldeans, who are independent, have no bells in their churches.

At this point the Zab is divided into two streams, one of which comes from the southern declivities of the Erdísh Tágh, in the district of Albak; the other from Kóniyeh, Karásún, and Kashen, where three different springs are marked in Colonel Monteith's map, evidently from actual recognisance; and the elevation given is 7500 feet—I do not know how determined, but coinciding with what might be expected from the observed elevation of the Zab

in the present upland valley, so near its sources, and where it is a mere brook, 6300 feet at Meilawa, 6800 feet at Kandá Kilissa. The sources given them by Colonel Monteith are correct, whatever may be the case with the course and tributaries of the river, as delineated in the same map. They rise between the territory of Salamast and Koṭúr, in the Sar al Bágh, from the sides of which the waters flow in three opposite directions to the lake of Urumíyah to the Caspian and to the Persian Gulf.

Kandá Kilissa is, as before said, a very old Armenian monastery. It is inhabited by a bishop and priest; the former of whom, an intelligent man, assigned to it an age of 1600 years. The door-way was a handsome specimen of Saracenic architecture, though defaced by a colossal bas-relief of the Almighty, a monstrous production, resembling a great idol. Around the arch were also other figures, with large heads of hair. On the bodies of these were some antique carvings, among which were some letters resembling those which had been identified as Armenian at Al Hadhr. I may mention here, that, with the exception of the Armenian characters, the sculptured signs on the stones of Al Hadhr are correctly rectilinear, and not variously contorted as in the specimens printed by the Society. The church of Kandá is defended by a rampart and bastions, and has two outer courts with defences. On a height above is a modern castle, with a guard of about forty Kurds from Básh Kala'h: for this is the frontier of the country.

*Tuesday, June 25th.*—This morning we left the valley of the last tributaries to the Zab, and entered upon a hilly country, with occasional ravines in limestone. It was so cold before sunrise that we were glad to walk to keep ourselves warm. In one of these ravines was a block of limestone with a semi-cylindrical hollow, to which is attached a tradition that a prince of Salamast\* was formerly converted to Christianity, and was in consequence pursued to the mountains; that he attempted to secrete himself in this hollow, but was slain there by his enemies. This locality of an antique martyrdom was treated with great respect by the Chaldeans in our company, who kissed it and then rubbed themselves in the hollow. The stone is well polished by these absurd observances.

Trachytic rocks and basalts break forth amid these limestone rocks, and constitute a group of hills,—Túrá Kháni Sar, or Akronal, which rise above a fine pasturing valley, with a lake in one part of it, and which was now occupied by an encampment of Persian Kurds. It takes its name from a ruined karavanserái in

\* This is the orthography insisted upon by Mr. Rassám. It is generally written Selmas, or Salmas. Major Rawlinson's map, I find, marks it correctly as a district, and not a town, as in all other maps.

the valley. A Kurd joined us from this encampment with his horse and gun, and behaved so outrageously to us, that had he continued till out of sight of his friends, we should certainly have given him a good beating ; but he was too wise to expose himself.

We crossed over a ridge of trachytes and descended by Khání Berín, re-ascending amid hills of conglomerate and igneous rocks, from whence we obtained our first view of the fertile plain of Salamast bearing due magnetic E., with the lake of Urumíyah beyond. There are moments which never slip from a traveller's memory, when, after a long journey on a heated or monotonous plain, a range of mountains with their anticipations of cool waters and refreshing breezes come into sight, or when, fatigued with mountain-toil and travel, a plain, smiling with gardens and villages, and full of promises of delicious repose, presents itself to his delighted vision.

Our descent to the plain from hence occupied us, however, 3 long hours, when we reached some basaltic cliffs, which led directly to the cultivated plain. On one of them were the foundations of a castle constructed of stones of large dimensions : to the S. was also a bold rock of limestone, which protruded out of the plain, bearing the ruins of Karnawí or Marandos castle ; and before us rose a small hill, the last of the basaltic knolls, with a small Christian church. Pits were dug in the bed of a river close to us to obtain gravel, which is sifted, and then sprinkled over the land, to adapt it for growing water-melons. Two more hours amid villages and gardens brought us to the Chaldean village of Khosrowá, the place of Khosroes\* (the Khusrue of Monteith's map), where we had an introduction to a relative of Már Shim'ón, and were well received and hospitably entertained.

The district of Salamast is covered with villages, as may be seen by a glance at Colonel Monteith's map, which appears, in what regards this district and that of Urumíyah, to be founded upon actual survey. These numerous villages have, as in many parts of the E., a common market, where is also the residence of the governor, and the whole is inclosed like a fort. This place is designated sometimes Salamast, sometimes Dilmán, but is generally known in ordinary parlance as Shahr, "the town," simply. It is the same with the district of Urumíyah. In all this part of Persia a bad Turkish is the language generally spoken : the better classes alone are acquainted with Persian. The Christians all look to the Russians as their protectors ; but the Persians have imbibed a notion that Mohámmad 'Alí, or rather Ibráhím Páshá, is destined to be the great bulwark of Islamism, and the conqueror of the Christian foe ; and Major Rawlinson also remarks the same thing of Soldúz.

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\* The Khosroes, or Chosroes, of historians, is Khosráú with the Persians.



*Friday, June 26th.*—We rode by U'la, where the American missionaries have a school, and Túrmel, to the hills which advance in bold rocks, bearing two castles over the lake of Urumíyah, and which are designated *Qará Básh*, or Black Head. But they have a culminating point westward, which had still a few patches of snow on its hoary head, and which, rising about a thousand feet above the level of the lake, is called *Zendasht Tágh*, or *Túr Zendasht* by the Chaldeans. These hills gave me much hard work, for their structure was very varied; the results, however, may be given in a few words: the fundamental rock was large-grained granular hornblende and feldspar, and the same mineral small grained passing into basalt. This rock became large-grained lamellar as in gneiss, or small-grained schistose as in certain chlorite schists. Superimposed were a breccia of limestone with fragments of hornblende rocks and limestone rocks often saccharoidal. A second series of rocks presented feldspar and black mica, large grained and lamellar, passing into black mica schists, and common mica schists much waved and contorted, and these into clay schists of various colours, red, green, and gray. Associated with these was a third series, consisting of quartz rocks, generally with a waxy lustre, and passing into jade. We crossed this range of hills and stopped in the gardens of the Chaldean village of *Gawalán*, to the N. of which is a larger Christian village called *Jemalawah* by the Chaldean residents, but *Jelálábád* by the Persians.

*Saturday, June 27th.*—Our road lay along the banks of the lake, but at some distance from the water, and over a dry, gravelly, or sandy plain, covered with a species of *ononis* and *mesembryanthemum*, amid which, when the soil was slightly saline, predominated a species of *salsola*—when very saline, a *salicornia*—when scarcely at all salt, *Nigella damascena*, *Capparis spinosa* and *C. ovata*. Thus, at an elevation of 4300 feet, we had at once the vegetation of Mesopotamia and of Babylonia, the *nigella* especially reminding one of *Móşul*, the *mesembryanthema* of *Hillah*, but vegetation was more dense; and the perpetual *artemisiæ* of the lower plains were a good deal replaced by *Astragalus verus* and *A. tragacanthoides*. Amid these were numerous vagabond flowering plants, which did not, however, affect the main features of the vegetation. Springs of water were frequent at the foot of the hills, the waters being generally brackish. They must become so in passing through the lacustrine alluvium; for the formations, at least on the W. side of the lake, are not such as contain saliferous deposits. I have not seen enough yet of the lake of Urumíyah to give an opinion upon the origin of its saltiness, but it is evident that it has diminished in size and left behind a considerable lacustrine deposit characterised by its saline plants.

Major Rawlinson is inclined to take an opposite view of the subject, and to consider the lake as encroaching upon the land. This may very well be occasionally the case, as in different seasons of the year when the supplies from the rivers are greater or less, and again at certain times when whole rivers are absorbed in irrigation or are allowed free course to the lake, as is related by Major Rawlinson of the Jaghatú and the Tátáu: but these are accidental phenomena, while the great extent of lacustrine alluvium, which has evidently been deposited by the waters of the lake, leaves no doubt of the general change produced in a great period of time, notwithstanding the irregular temporary variation in the level of the waters.

The district of Urumíyah presents an extraordinary scene to a person accustomed to the treeless monotony of the plains of Mesopotamia; a more fertile district can scarcely be imagined. One vast extent of groves, orchards, vineyards, gardens, rice-grounds, and villages, sometimes with a village common. It much resembled the best part of Lombardy, between Milan and the Lago Maggiore. Five American missionaries, with their wives and families, are now stationed in the town of Urumíyah, where they pursue their benevolent work of educating the young Chaldeans, in a delightful climate abounding in all the luxuries of life. May they long enjoy them and continue their truly useful and valuable labours!

*Sunday, June 28th.*—Leaving Urumíyah we crossed the river of Suhúr by a bridge of five arches, and crossing a low range of hills entered upon a very fertile low rice country, which extended nearly to the banks of the lake, and to the S. gradually became a marsh, which must be unpassable at certain seasons of the year. We had some difficulty in fording the Burrandúz, also a goodly stream, beyond which we stopped for the night on the marsh near the fortified farm of U'ládí. This plain was everywhere covered with large herds of horses and cattle, and flocks of sheep and goats. There were also many villages, and every appearance of the same prosperity and fertility met with all along the E. side of the same mountains, which on the western side are, generally speaking, so sterile and unproductive.

*Monday, June 29th.*—Passing the villages of Thomator (christian) and that of Chár, each with its mud fort, we entered upon the hills which now separated us from the plain of Ushnei, or Shino as it is generally called. We entered by a ravine, about  $1\frac{1}{2}$  mile up which we found the village of Kasinlí, the hills around rising barely 800 feet above the valley. At mid-day, having travelled 6 hours, we came to an upland of sienitic rocks, having traversed which we descended upon the

plain of Ushneî, and passing the Christian village of Châm, we rode through Ushneî without stopping, and bivouacked in a field beyond the town. The plain of Ushneî is traversed in its centre by the river Gâder, and may be estimated at 8 to 9 miles in length by 2 to 3 in width. It contains eight villages besides the residence of the governor and market-place (Ushneî), and two forts, both near the river. This differs much from the account given by Major Rawlinson, but I think the variance is owing to his having included in his estimate part of the lower valley of the Gâder, which from the direction by which he approached Ushneî may have more the appearance of constituting part of the upper plain. This plain is at an elevation, by boiling-point thermometer, of 4619 feet, which appears from the short course of the Gâder to be correct. Salamast plain, nearly on the same level as the lake, has an elevation of 4379 feet, Gawalân 4563 feet (probably 150 feet too much), Urumiyah 4518 feet, a good approximation, leaving to the lake an approximate elevation of 4300 feet. The mountains of Keli-Shîn rise from 1000 to 1500 feet above the plain, or about 6000 feet above the level of the sea; and they presented a nearly continuous extent of snow, descending 500 feet down their eastern declivities to the zone of fennel. The plain itself appears to have been once a lake, which was gradually filled up by deposits of gravel brought down by the Gâder, and which at the upper end of the plain attain a depth of upwards of 100 feet. A mud fort of no great antiquity, 2 miles S. 34 W. of Ushneî, has been raised from its previous insignificance by the learning and research of Major Rawlinson, and proved to be the village of Saragana, where the army of Narses effected its junction with the Armenian contingent. It derives, however, still more importance from its corroborating the ancient existence of a great thoroughfare across the mountains by Herîr, Rowândiz and Sidek.

We suffered some inconvenience from the picturesque red-turbaned Kurds of Ushneî, who held various debates concerning the appropriation of our goods; also from the fears of the more tranquil black-capped gentlemen, who urged us in the strongest manner possible not to venture into the mountains, nor even to sleep outside of the town. Their strong representations, backed by the many private conversations of portions of the crowd, so influenced some of our party that only four remained to breathe fresh air in the fields, the remainder betaking themselves to the town, although we had frequently had throughout our journey (and even the night before) the very same representations made to us, without any other result than leaving me and my servant to sleep alone in the mountains. Finding this want of confidence,

application for a guard was made next day to the governor of Ushneï, which led to much disappointment. Ushneï is, by meridian altitude of Saturn, in N. lat.  $36^{\circ} 55' 29''$ .

*Wednesday, July 1st.*—Waiting for the guard, we did not get off till afternoon, when, fording the Gáder, we passed by Sinkár, and then, instead of proceeding direct to the pass of Keli-Shín, we turned to the W., to the summer quarters of the Serúji Kurds, where our Zerza guards had to transfer us into the hands of the Kurd Beg. By this movement I was deprived of the pleasure of examining an inscription I was most anxious to see, and which I had first heard of from the Roman Catholic Chaldean bishop of Mósul, who is a native of Salamast. My regret has however been lessened by reading Major Rawlinson's account of the same stone and writing, which, if engraved on the compact blue slate or schist of the neighbouring mountains, as appears from that gentleman's description to be the case, must be irrecoverably illegible. It is satisfactorily determined, however, to be a cuneiform inscription. I never heard anything of a second inscription, as mentioned by Major Rawlinson. The *second range*, which overlooks Sídek, is the peak of Rowándiz; and it may have been lost by leaving the great road to ascend that mountain.

*Thursday, July 2nd.*—We started at an early hour for the ascent of the Keli-Shín, which was performed on foot; but we were delayed by the non-arrival of the Kurds who were to act as guards, and without whom the muleteers would not proceed; when they came up, only two were armed, and these began, in the most haughty and insolent manner, to ask for pipes, which nobody seemed inclined to give them. We then proceeded on our journey, and crossing the first range, gained a country with less snow and more wood, and with many flocks of sheep and goats feeding on the mountain sides. We soon, however, came to another range, with glaciers, the slope of which created some anxiety. We passed three of these, however, in safety; it was more fearful to look at another passing over them than to venture oneself; a single slip would infallibly have hurried a person to a vast depth.\* When we gained the next crest, the peak of Rowándiz was only distant from us two more summits and crests, and was easily attainable. I had gone behind a rock to take a few bearings without attracting attention, when I heard a quarrel, and upon my return found Rassám and Dávud agitated with alarm. The Kurds had insisted on being paid according to their unlimited demands, and upon the mountain where we were. I was glad of this, as there was now an opportunity of repaying them for their previous insolence, which had indeed been intolerable all the way. They were now alone on the mountain, and the Greek and myself were infinitely better armed than they, and

our arms in better condition, so we told them to go about their business, they should not have a farthing. Mr. Rassám, however, who was for pacific measures, promised one of the guides to pay him at Rowándiz. Finding that they could get nothing from us here the two ruffians went off, which was an agreeable riddance.

We now continued our ascent of the mountain. Vast piles of snow, accumulated by the drift winds to a depth of many hundred feet, were only broken through by bold and sharp rocky pinnacles of grey and green quartz, or broke off abruptly over dark precipices of brown and blue schists, shivering away in silvery leaflets, and shaking in the breeze more like fragments of the ice-heap than of the mountain. The *Aretia alpina*, and here and there a saxifrage, were the only remaining specimens of vegetation; on some sheltered moist spots grew, in one mass, *Polytrichum septentrionale*. Proceeding over the first mountain, we had a descent to make through a ravine filled with snow, then another ascent steep and rocky, and another glacier, till hope deferred made the heart sick. At length we came to a precipice formed by a vast dyke of sienites, which crossed the whole crest, and constituted the summit of the peak of Rowándiz, or Sheikhíwá, as it is called by the Kurds. We were now obliged to climb, but perseverance soon brought us to the top, from whence we enjoyed a view of almost all Northern Kurdistan, favoured as we were by an uncommonly clear and fine day; nothing but the haze produced by the intense heat of the plain prevented our seeing Mósul. Indeed it was well that before my departure I had taken several bearings from Mósul to this mountain, for since the great heats have come on it has been no longer visible. It bears from Mósul N. 81°.5 E.; mag. var. 8° W. Its elevation, by boiling-point ther., 10,568 feet. But, although remarkable by its position, there is no doubt that some of the summits of the Jellú mountains, which are peaks rising on a sea of peaks, or mountains superposed on a group of mountains, exceed it in elevation; as also do probably, though to a small extent, the Máranán mountains; indeed, all the loftiest Alps occur towards the heads of the tributaries of the Great Zab, adhering to the narrow line of the granitic axis; and lower towards the head waters of the Little Zab. At the same time I doubt if there are any mountains in Kurdistan which attain an elevation of 15,000 feet, as marked on Colonel Monteith's map; the highest summits of the Jellú or Jáwur Tágħ, viewed in comparison with Sheikhíwá, not appearing to attain a greater elevation than 12,000 or 13,000 feet.

On looking around I was particularly delighted by the number of old friends which I could distinguish; first, and most promi-

nent, were the Jellú mountains, from which I was separated by what might truly be called a tremendous country of awful chasms and steep precipices; although, when one comes to face these difficulties, such a pigmy is man compared with surrounding nature, that they are merely steep slopes which he may tread, just as an ant finds a firm hold upon what to us appears the smooth surface of a stone. The southerly peak of Jellú evidently surpassed the peak of Rowándiz in height. Advancing from the Jellú upon the valley of the Zab, which here and there displayed itself, glittering out from the wooded vale below like a minute silver thread, was the bold but less lofty mountain of Linitka: beyond was the chain of Matíneh; and nearer, that of Ghara Tóbi and Rash Kaím, which terminated with their rugged summits the prospect to the N.W. It is the abrupt termination of these chains, and the opening that extends between them and the Zobár country and mountains, which allows of the Sheikhiwá being seen from Mósul. To the W. was first the bold and wooded mountain of Sar-i-Burd, with the beauteous vale of Sídaká, or Sídek, at its base; and beyond this the giant precipices of limestone which guard Rowándiz, and which open their rocky breast to allow the waters of four rivers to mingle together. To the S.W. the country was lower, yet I recognised some well-known points near Kóí Sanják; while the lofty summits of the Kandilán mountains limited the prospect to the S. To the E. was the noble expanse of lake Urumíyah, and the comparatively low country of Lahijan and Soldúz, backed by the hills of Sardúsht and Mikrí, and extending in the E. till lost in the haze of a mid-day sun. I omitted to mention, although I had previously noticed it from the Keli-Shín, that the river Gáder forms three small lakes before losing itself in the lake of Urumíyah. But, as these lakes were not noticed by Major Rawlinson, it may be inferred that they are only temporary.

It was with regret that we tore ourselves from this magnificent prospect; added to which, the mountain itself had a charm which was deeply felt by all. It perhaps more particularly originated in the deep silence which reigned upon this lofty summit, and which appeared as if for ever unbroken on the spot which thus rose up to the region of the clouds so perfectly alone, so pure in its canopy of white, and with an atmosphere so substantially deep and blue that it seemed a cloud of itself; and the spectator shuddered to think himself upon its bosom!

It has been truly remarked that

“ Not vainly did the early Persian make  
His altar the high places and the peak  
Of earth-o’ergazing mountains.”

Coleridge, if I may be allowed one more quotation from a  
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remembrance of home, beautifully expresses the sentiment awakened by such situations :—

“ O dread and silent mount ! I gazed upon thee,  
Till thou, still present to the bodily sense,  
Didst vanish from my thought ; entranced in prayer  
I worshipped the Invisible alone.”\*

After half-running, half-sliding, we found ourselves in an hour comfortably seated just below the inferior limits of snow, where a fire had been kindled, and breakfast was prepared to reward us for our toil. There were also a host of Kurdish shepherds who had gathered round to wonder who were the madmen—for they were polite enough to deem us such—who had come to run, as if in derision, over their snow-clad mountains.

A large caravan passed along the road in the course of the morning, and indeed, notwithstanding the bad habits of the Kurds, this is in summer-time one of the most frequented passes in this part of the country, the same merchants having recourse in severer seasons to the road by Rowándiz to Só-új Bolák ; but in winter all roads are equally impassable. The elevation of our halting-place was 8568 feet.

On leaving this, we kept rounding the declivities of the mountain, which presented diallage rocks, talc schists, red and brown schists, and conglomerates. The first rivulet we met with came from a small lake at the south-west side of the mountain, which has apparently, but a few years ago, broken its boundaries, and scattered over the valley a vast accumulation of rocks, boulders, and pebbles. We next passed a torrent 12 feet by 2 in depth, a little further one of 11 feet by  $1\frac{1}{2}$ , and then another 14 feet by  $1\frac{1}{2}$ . All these large streams flow from only one side of the mountain, and unite in a wooded vale below, where is the village of Berk-ammá. We continued to descend rapidly till we reached the

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\* If Major Rawlinson be correct in supposing that the mountain of Asnavend, which bore one of the three original sacred fires—that of Azer-Geshesp—was at or near the famous Keli-Shín, this high and remarkable mountain was the most likely to be chosen as the site of the temple ; but it may be objected both to the Sheikhiwá and to the Keli-Shín, that they are rendered almost inaccessible by snow and glaciers, and I am much more inclined to seek for the site of Asnavend at the peak of Atash Tágh, or fire-rock, before noticed, and which is a commanding yet accessible eminence, and better adapted to the description given in the *Zend-Avesta* (tom. iii. pp. 22—328), where Mount Asnavend is mentioned as between Var Khosraú, or lake of Ván, and Var Tekhesht, or lake of Urumiyah : the Atash Tágh, near Arghí, or Arja, which was also by name and by tradition the seat of a fire-temple, and answers best to the geographical position given in Anquetil de Perron's, *Zend-Avesta*, being 18 hours from either lake. Major Rawlinson's argument is mainly founded upon the possible derivation of the word Asnavend from Ushnei—the O'shnoh or Ashnokh of the Syrians. The position of the mountain of Asnavend does not affect the discussion of the same traveller regarding the original seat of worship at Shíz—the Atropatenian Ecbatana—for it was after the defeat of Azdewjar (Astyages) by Kei Khosraú (Cyrus) that the fire was taken to the mount. The peak of Zendasht, or lake Urumiyah, may also be noticed as a mountain remarkable in position, and to which tradition has attached a fire-temple.

region of oak, jasmine, small honeysuckle (*Lonicera alpigena*), acacia, and *Cercis siliquastrum*. Our descent, however, continued 5 hours from the halting-place, at a fair pace. When we gained the valley of Sídaká or Sidek, we rested at the village of Jeffúli, at an altitude of only 3742 feet, so that, without crossing any intervening ranges, we had descended directly from the peak of Rowándiz to a considerably lower level than the plains of Azerbaijan and the lake of Urumíyah. The change in the temperature and vegetation was, as may be imagined, very great. We were in the midst of rice and melon cultivation, and surrounded by groves of mulberry. Several little villages were scattered along the side of the river of Sídaká, or upon the declivities of the hills. The valley is, strictly speaking, a ravine at the base of the Sheikhtawí; it and the surrounding country still remain under the government of the Beg of Rowándiz. The tribe dwelling in this vale called themselves Pír 'Astíní.

*Thursday, July 2nd.*—We continued our road along the valley of Sídaká, as it is called by the Kurds, and by the Persians Sídek. We passed a river from the S.E., 10 yards wide by 1 in depth, and crossed it by a bridge; immediately beyond which was a brook and ravine, and this latter isolates a bold projection of rock, which is washed on the opposite side by the river of Sídaká and the last-mentioned river united. On this projection is the fort of Sídaká, a square court with four round towers at the angles; but having also in front another curtain and gateway defended by two more towers. Before the castle is the village, which contains about 100 houses. Although the present castle is a comparatively modern building, the rock on which it stands appears to have been chiselled on its face at a very remote date, for the waters have since that period wrought changes which are easily distinguishable from what was done in ancient times to render the rock more difficult of approach. There is every reason to believe, from the peculiarities of its position as well as from its antique appearance, that it was a station or fort at the time when this was the great road from Nineveh to Ecbatana. A wooded open valley unites with the Sidek vale from the S.E., and the united waters flow into the comparatively open country between Sar Linitka and Sari-Burd. I had but a short time allowed me for the examination of this curious place, and search for inscriptions, which, as I chiefly sought them on the face of the rock, I may probably have overlooked, if they be upon a pillar, as mentioned by Major Rawlinson's informant. The soldiers came out of the castle, insisting upon an examination of our papers and baggage, as this was the Rowándiz custom-house. At last I was obliged to yield to the general desire to hasten on.

Immediately beyond Sídaká we commenced the ascent of the



Sari-Burd, a mountain of brown, blue, and green schists, and covered with oaks, including a large proportion of *valonía*. This country, as far as to the mountains W. of Rowándiz and to the Zobár due W., is but a continuation of the 'Amádiyah district, and, like it, is the true district of *valonía* and gall-nuts. We were 5 hours accomplishing nearly the semicircuit of Sari-Burd, which we had to do to gain the valley of Rowándiz, where it is washed by the river of Sídaká, which falls into the river of Rowándiz (Rúbári Rowándiz) a little below the town, and on the E. side of the limestone range, incorrectly called by Dr. Ross Beni Hindevin. In these mountains there are people of four nations and four languages, viz., Kurds, Chaldeans, Turks, and Persians. Major Rawlinson, being conversant with the Persian language and travelling only in Persian Kurdistan, has uniformly adopted Persian names, as Sídek for Sídaká, Ushneî for Shino, &c. A mountain, in Kurdish Chá, in Turkish Tágh, in Chaldean Túr, in Persian Sar, varies in its other names also, according to the language of those whom you address. I invariably adhered to the names used by the Kurd shepherds when I could obtain them; but Dr. Ross, though an observing traveller and a good Orientalist, has been evidently imposed upon by his Arab companion Sayyed Hindí, who has furnished him with Arabic names, as Beni Hindevin, Beni Karak, Beni Havírah, &c., the sons of Hindevin, &c., which have no existence in these mountains. Indeed I have found from long experience, that the best guides and attendants, when fatigued by travel, will sometimes coin a name merely to save the trouble of inquiry.

The latter part of the descent of the Sari-Burd for  $2\frac{1}{2}$  miles is carried along a shelving declivity of schists, and cannot be ridden over on mules. I need not add that it is quite impracticable for artillery, and constitutes the second of the difficulties of this road, which are three in number, viz., the snows of the pass of Keli-Shín, the descent on slates at the foot of the Sari-Burd, and the vast limestone precipices W. of Rowándiz. I here became acquainted with a fact of the utmost interest to me, although my space will not allow me to enter into the details of the inquiry. All along the valley of Rowándiz and at the western foot of the Sari-Burd, tertiary brown sandstone, with ostracites and sandstone conglomerates of the same period and unaltered, underlie the schists of Sari-Burd, which exactly resemble in mineralogical characters those of the peak of Rowándiz and of the Kárasí Tiyári. I had long suspected, from a variety of circumstances, that these schists were merely altered tertiary rocks, but I was not prepared to affirm so bold a conclusion, till the evidence thus presented left no doubt in my mind, and I have brought away with me specimens illustrative of the changes by which a common coarse

brown sandstone becomes a beautiful schistose rock. We halted a short time at the Christian village of Dyana, and then rode along the plain to Rowándiz.

I was prepared to meet with much to interest me in the position of this town ; but the reality exceeded my expectations. We were almost at its portals before it became visible ; but it was easy to see, from the distribution of the numerous ravines, with their perpendicular walls of limestone rock, whereabouts the town would be. At length, coming over a gentle hill, we saw a mount with one of the usual square castles with round towers upon its summit ; but this was not yet Rowándiz. We travelled on, and tower after tower displayed itself in succession, till, upon a naked plain of limestone, higher up, a few gardens made their appearance, and at length the town itself burst upon our view : the houses, built in rows, one above the other, and descending in successive tiers, along a tongue of limestone, which has a deep ravine to the E., and another to the N., the latter containing the river of Rowándiz. We descended into the ravine, and found a bridge thrown across the precipice where the river is only 10 yards wide and about 1 yard deep, and rolling about 20 feet below us.

The town of Rowándiz has been estimated at 2000 houses, but I could not count more than 1000. As I may, however, have left some out, let it be allowed altogether 1300 ; but most of them contain from two to three families, none so few as one, and many more. Indeed I never saw such a crowded population, nor so strange a scene : the roofs of the houses have no walls as in other eastern towns, and the moment the sun sets the dinner is taken, and the bed made upon the roof ; for the pent-up valleys of Rowándiz and 'Amádiyah are more oppressive even than the plains of Mesopotamia. There were more than 500 persons to see us eat ; and so great was the population that at night I observed there was not room enough on the roofs, and that hundreds of people, men, women, and children, lay in the streets. Many had entwined a few branches round their couches ; some had erected little scaffoldings of wood and branches, on which slept the family, dogs, and fowls. The only symptom of modesty exhibited was a great outcry amongst the fair sex that Mr. Rassám wore spectacles to gratify an improper curiosity, and he was obliged to take them off. Altogether there was less refinement here than I have yet witnessed in the East. The town is defended on the land side by a wall with round towers ; and the Beg has several guns. There were also several round towers outside the town : on the opposite side of the E. ravine there are two ; between the castle, to the N., and the ravine of the river, there are two more, and two in advance of the walls on the land side.

There is also a larger tower in the town on the higher part of the rock. The Beg has as usual the best house, and a very pleasant summer-house, covered with branches of trees, where he spent the day while we were there. The present Beg is brother to the late chieftain, celebrated for his extreme ambition, and whose fate is somewhat involved in oriental mystery. It is well known that he was allured and not beaten from his fastness; for 'Alí Páshá only brought his guns to the hills of Herír, which, as far as regards the difficulties of the country, was no nearer than Baghdád. The Beg went to Constantinople to plead his cause, and certain of the foreign embassies interested themselves in his fate, although he appears to have been a sad lawless mountain-bandit. However he was re-appointed, with the title of Mohammed Páshá, after swearing allegiance to the Porte, and was shipped off to Samsún, but disappeared at Amasiyeh, owing to illness, it was studiously reported; but from inquiries we made at Amasiyeh itself, a few years back, we learned that he was there overtaken by a messenger from Constantinople with the bow-string. The people still asked us about their old chief, whom they looked upon as a sort of Tamerlane.

Dr. Ross, and, on his authority, Major Rawlinson, have written of the river of Rowándiz as if it were identical with the Great Zab, which is not the case, as the river of Rowándiz comes from the W. slope of the Kandilán mountains; and up its fine and open valley is the road to Só-új Bolák: near Rowándiz it enters into a ravine of limestone, and receives at the town a stream from the S. The beds of limestone dip at an angle of  $10^{\circ}$  to the E., or towards the waters; and thus the ravine keeps increasing in height to the W. Not far below the Rowándiz is a gap in these cliffs to the S., through which flow the winter-torrents from a high mountain, towering over these ravines, and called Sar Hasan Beg. Further on, and about 1 mile below Rowándiz, the river of that town is joined by a much larger stream, formed by the union of the three great streams described above, with many minor ones, which flow from the Sheikhiwá and the river of Sídaká. The united streams then flow onwards, till about  $1\frac{1}{2}$  mile further they receive another river from the S.W.—a river which presents the very great peculiarity of having its origin outside of or to the W. of the limestone chain of Sar Hasan Beg, which it enters from the W., passing through deep ravines and secluded dells till it falls into the river of Rowándiz, to flow out of the same mountains back again to the W.; and very little beyond this junction, the united streams of Sídaká, Rowándiz, and the last-mentioned stream, flow into the Great Zab. The union occurs amid stupendous precipices of limestone, which rise per-

pendicularly upwards of 1000 feet above the pigmy torrents, though these must have been the main instruments of this singular configuration and distribution of rock and water.

*Friday, July 3rd.*—We did not leave Rowándiz till mid-day. There was much commercial activity in the khán. They were loading two caravans at the moment with madder-root, tobacco, and buffalo-skins. The merchants of Mósul bring there English and French goods to exchange for galls. I saw the skins of two Kurd foxes, evidently a peculiar species (*canis alopes*?), very small, with no brush to the tail; the fur fine and short, of an ash-grey colour, except the mesial line of the back, which was brown; the ears were short. Passing the gardens of the town, we made a descent into a deep valley with a gap through the lime-ridge into the bed of the Rowándiz River; we then ascended  $1\frac{1}{2}$  hour to the crest of the shoulder of Sar Haşan Beg, from whence the Great Zab bore N. 48 W., and Sheikhiwá N. 78 E. The rocks of the Great Zab had become nearly horizontal, but soon afterwards were waved and contorted. It took us exactly  $1\frac{1}{2}$  hour to descend the precipice which now separated us from the river. The road winds down the perpendicular face of the rock so gradually that it may be ridden on most of its length. We went fast, for we were thirsty, and the windings must have been 6 or 7 miles in length.

Having gained the bottom, the road does not follow the valley or ravine of the Zab, but of the river of Pir Haşan, which flows into it. The elevation of the cliff measured trigonometrically was 1100 feet, or 1125 feet to a jutting crag. I had been informed by Dr. Ross of a castle in this pass, called Rúm Kal'ah, but I saw nothing but curiously-shaped rocks, which might easily obtain that name; there were also many spacious caves in these cliffs. The rivers abounded in fish; and our road up the glen of the Pir Hasan river had many charms. In the first place the steep precipices shaded us from the hot beams of the sun; there was plenty of water, and the wooded cliffs presented great variety of scene: in some parts vast slips had taken place, and huge masses of rock for a time hid the river from sight; then we came upon a little open space with a base of sand or gravel, while at other times the road was carried with difficulty under overhanging cliffs. At length we came to the open plain, where the limestone rocks at the outskirts of the range were nearly vertical, while within they became almost immediately horizontal, an arrangement not so readily accounted for by the hypothesis of upheaving forces, as by that of subsidence. We bivouacked on the banks of the river, and near the village of Pir Haşan.

*Saturday, July 4th.*—We had now entered upon an uninteresting country—the sun-burnt plains and undulating district which

extends between the outlying low ranges of hills of the Kurdistán mountains. First on our road were the hills of Koniátman, clad with oaks, among which appeared a modern square castle called *Kála'h Kin* by my informants, and *Kála'h Júlámerik* by the muleteers, who were from Rowándiz. These hills led us to the plain of Herír, beyond which is the rocky range of limestone called *Gharah Surgh*. Passing by *Anomá*, a large village, we came to the banks of the *Zab*, where is a ferry and two villages, the one on the left bank being called *Kasroki*, that on the right *Kendil*. The ferry, however, had been removed lower down, and when we reached it, as there was only a very small raft supported by eight skins, it took us three journeys of 1 hour each to carry over everything : there was no tree nigh to shelter us from the sun.

Much allusion has been made to the comparative size of the Great *Zab* and of the *Tigris* at *Móşul*,—and this is not surprising, since they are so nearly equal in magnitude that sometimes the one has the superiority, sometimes the other. I have collected a variety of data upon the subject, and the result is that at *Nimrúd*, at the ferry to *Arbíl*, and at *Herír*, the *Zab* varies from 150 to 200 yards in width, while the *Tigris*, seldom less than 200 yards, expands occasionally to 300 and even 400 yards, as at *Yarumjah*. In fact the *Tigris* varies very much, so that at the time of flood it presents the appearance given to it in *Col. Monteith's* map, which represents it as formed at *Móşul* of many branches. At these seasons it attains in some places a width of from 800 to 1000 yards, and is a truly splendid sheet of water. But the *Zab* is always much deeper ; and it is probably on this account that it is so celebrated for the quantity and size of its fish. It contained when we saw it a larger body of water than the *Tigris*, whose tributaries are not supplied by so many snow-mountains as those of the *Zab*. Indeed the main branch, or that of *Arghana M'aden*, comes from mountains (*Azarah*) where there is no snow at this season of the year. The temperature of the waters of the *Zab* is also several degrees lower than that of the waters of the *Tigris* throughout summer, and they are consequently delicious to drink.\*

A little beyond the ferry we entered upon a country of sands and sandstone, with the usual rivulets clad with gaudy oleanders. There are many villages on the banks of the *Zab*, which is driven by the *Gharah Surgh* further N. than is marked on the maps. We stopped at one of these villages, called *Isá*, by the side of a clear

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\* I have since learned that the Great *Zab* is considered as uncommonly high this season, and has thus interfered with the caravans of camels, which can generally ford it by the end of July. Still as the seasons of the floods of the *Tigris* are in April and May, and those of the *Zab* in June and early in July, the superiority passes in succession from the one to the other. When at their lowest, probably, the *Tigris* has a slight pre-eminence.

spring, having a temperature of 69° Fahr.; the air being 110° Fahr. after sunset. We suffered much this night from hot blasts, which came from the plains of Mesopotamia, and kept the thermometer at 110° during the night. It was impossible to sleep under such circumstances; but the result was beneficial, and next day the atmosphere was generally cooled and more agreeable.

*Sunday, July 5th.*—The main part of the morning's journey was directed up the valley of the Akra' River, which is a tributary to the Zab, and not to the Khazír, as marked in Dr. Ross's map. About 8 miles from the Zab there are two streams; one from N. 50 W., finds its way by a ravine through the limestone range that flanks the low country, and is here called Sir-i-Sadah; the other from Akra'. This valley and the plain of Nav-Kúr (the Plain of Mud) produce the greater part of the rice consumed at Môşul, as well as many common and water melons.\* We left the valley by a hill called Sar Deríyeh, of no great height, but commanding a most extensive prospect, and from whence I got bearings of all the various outlets of waters from the mountains, with also the inlet of Pír Haşán, the only case of the kind that I know in the Kurdistán hills.

Below this hill we entered upon the extensive plain of Nav-Kúr, studded with villages, but only very partially cultivated; yet more so than in its northern portion, where we had crossed it on our departure. The river Khazír flows through its centre, but afterwards approaches closely to the foot of Jebel Maqlúb, which it washes at its south-eastern base. We travelled on till dark, and then took up our quarters in the village of Chorek.

*Monday, July 6th.*—The Jebel Maqlúb is prolonged to the S.E. by low hills of sandstone, on the side of which is the large village of Zenganah. The Khazír forces its way through these hills at the foot of Maqlúb, but is again turned off by the hill indifferently named 'Ain al Şafrá, the yellow spring, or 'Ain al Beidhá, the white spring—from two springs on it so called which irrigate the lands of the village of Bertulli and others. The 'Ain al Şafrá and Maqlúb appear from Môşul as two distinct hills, but they are united by a low range of sandstone and limestone, amid which is the village and khán of Duberdah. We took breakfast at this place, and trotted from thence to Môşul in four hours, the distance being about 18 British miles.

It now only remains for me to conclude with those remarks which, as results of observations made throughout the journey and not of any single observation, could not well find a place in the narrative.

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\* The best and largest water-melons are produced by the Khozar.

1st. I have omitted the detail of the geological structure of the mountains, as occupying too much space, but I have endeavoured to express in a brief manner all the leading facts of that structure in the sections which I have drawn up for the Society, and which will be also an answer to the instructions regarding the search for coal, which search proved in every respect unsatisfactory; while my journey to Ur (Kāl'ah Sherkāt) will inform the Society of the extensive forests occurring on the banks of the Tigris N. of that remarkable site.

2ndly. It is well known that the determination of the line of perpetual congelation is attended with many difficulties. This limit is much affected by the continuity of mountain-chains, and thus we have reason to expect that it will be lower in Kurdistán even in more southerly parallels than in Mount Ararat, a comparatively isolated mountain, and where it is placed by Parrot at upwards of 13,000 feet. This is confirmed by the observation on Sheikhiwá, the summit of which is covered by a dome of more or less perpetual snow at little more than 10,000 feet. The Máranán hills present also at a similar height domes of perpetual snow, of which parts always remain, while the craggy summits of the Jellú mountains, which rise above the same line, are so steep as to present only bare and naked rocks.

The aspect of the mountain does not affect in Kurdistán the distribution of snow so much as local configuration, and hence it is of the highest importance to distinguish snow-drifts on hill sides, and accumulations in ravines and sheltered glens, from the other indications; on a general observation, the snow lasts longer and descends lower on the eastern side of Kurdistán than on the W. This is more particularly seen on the Burdasúr mountains W. of Urumíyah, and in the Keli-Shín W. of Ushnei. There can be no doubt of this fact, which is perhaps to be attributed to the higher temperature of the winds blowing from the valley of the Tigris and the plains of Mesopotamia than that of the wind from the uplands of Persia. All patches of snow not continuous are formed by drifts, which last a long time, in consequence of the quantity of snow accumulated in them. These snow-patches extended in July as low as 6000 feet; but when protected by ravines, and in continuous mountain districts, to 5500 or even 5000 feet. When these snow-patches occur in Alpine ravines at great heights, and remain there all the year round, they still do not indicate the line of perpetual snow; such are met with in Kurdistán at an elevation of 9000 feet. As a general result it may be said that there is no chain of mountains in the Hakkári country which can be said to attain the line of perpetual congelation, although the summits of Túrú Jellú, of Sheikhiwá, and of Máranán, approach very closely to it.

3rdly. During the present journey great care was taken to obtain the temperature of springs at different elevations, and more particularly of those which might be supposed to come as nearly as possible from the line of constant temperature or isothermal line, which Kupffer (Poggendorf's *Annalen*, 1829) has placed in those parallels at a depth of 25 metres, and which in the cellars of the observatory at Paris, are known to be at a depth of from 60 to 70 or 80 feet. The complete discussion of the observations collected on the present occasion would carry me far beyond the limits suitable to a memoir. Suffice it to say that the diminution of temperature observed at various elevations did not exceed  $1^{\circ}$  of the centigrade thermometer (which I always used) for 600 feet ( $1^{\circ}$  Fahr. for 333 feet), whereas De Saussure gives for the Alps in summer  $1^{\circ}$  for 528 feet; Ramond, for the Pyrenees,  $1^{\circ}$  for 538 feet; Humboldt, for the Andes, in equin. zone,  $1^{\circ}$  for 187 metres (which is what Gay Lussac obtained in his aeronautical journey); and in temp. zone,  $1^{\circ}$  for 174 metres. Kupffer, on Al Búrúz (Caucasus) found a diminution of  $1^{\circ}$  of Reaumur for every 740 feet, which comes nearest to what is experienced in Kurdistán. At an elevation exceeding 5000 feet the diminution of constant temperature, as indicated by springs, grew more rapid, amounting to  $1^{\circ}$  for every 550 feet. The thermometer in the atmosphere gave nearly a similar result, but with currents of air from glaciers this could not be depended upon.

4thly and lastly! With respect to zones of vegetation, too interesting a subject to be neglected in twice crossing so remarkable a range of mountains, we observed one great peculiarity, which is the absence of the coniferæ—indeed I did not meet with a single fir, pine, or laurel in the whole range of our travels: myrtle is also wanting. The zones of vegetation were as follows:—

1. From the plains of Mesopotamia to the height of 1000 feet is the zone of *Glycyrrhiza*, *Robinia*, *Nigella damascena*, wild vine, pistachio, oleander, roses, plane tree, *Syringa argentea*. Country of rice, grapes, melons, maize, &c.

2. From 1000 to 4000 feet—zone of oaks, *Quercus valonia*, *Q. infectoria*, &c. This is the country of pears, apples, plums, &c.

3. From 4000 to 5000 feet—zone of *Lonicera alpigena*, jasmine, *Amygdalus nana*, *Astragalus verus*.

4. From 5000 to 7000 feet—zone of *Astragalus tragacanthus*, *Rhamnus saxatilis*, pæony, fennel, *Primula auricula*, *Helleborus hyemalis*, *Crocus alpestris*.

5. From 7000 to 9000 feet—zone of saxifrages, *Alchemilla alpina*, *Gentiana asclepiades*, *Veronica aphylla*, and *saxatilis*, *Polytrichum septentrionale*.

In conclusion I may observe, that however gratifying it may be



to my feelings as well as to those of my fellow-traveller Mr. Rassám, to have assisted in restoring a Christian nation to the notice of the civilised world, I am yet fully aware of the imperfection of our labours. Much remains to be done before the curiosity at present awakened respecting the geography, natural history, and antiquities of Kurdistán can be thoroughly satisfied. Some time must elapse and many efforts must be made before all the recesses of those wild mountains can be fully explored: but that they are accessible to an inquirer using proper caution has been proved by this journey, which it is hoped may thereby give a fresh impulse to discovery.

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III.—*Sketch of the Eastern Coast of Central America, compiled from Notes of Captain RICHARD OWEN and the Officers of Her Majesty's Ship Thunder, and Schooner Lark. By Captain BIRD ALLEN, R.N.*

THE best existing charts of the coasts of Honduras and Yucatán being extremely defective and quite inadequate to the growing commercial intercourse between England and the independent States of Central America, the British Government directed a minute examination to be made of the whole of this eastern coast and the adjacent islands and banks, a brief account of which is contained in the following pages.

From Cape Catoche, the north-eastern point of Yucatán, the survey was prosecuted in a southerly direction for 370 miles along the eastern shore of this peninsula, including the shores of Spanish Yucatán and the British settlement of Honduras; then in an easterly direction 350 miles to Cape Gracias á Dios, comprising part of the coasts of Guatemala and Mosquitía; and lastly, again to the S. for 250 miles to the river Colorado, in lat.  $10^{\circ} 47' N.$ , long.  $83^{\circ} 35' W.$ , being the remainder of the coast of Mosquitía, and 45 miles of the coast of Central America.

The latitudes and longitudes were, when practicable, observed on shore, the former generally by meridian altitudes of stars N. and S. of the zenith, and the latter by chronometric observations. The chain of connexion between the West Indies and England is subjoined from Captain Owen's nautical memoir descriptive of the survey.

"We were furnished with eight excellent chronometers, the Standard (No. 114, by Dent) being the watch that gained the first prize in 1829 at the Royal Observatory, Greenwich, and was the best watch that at that time had been placed there for trial.



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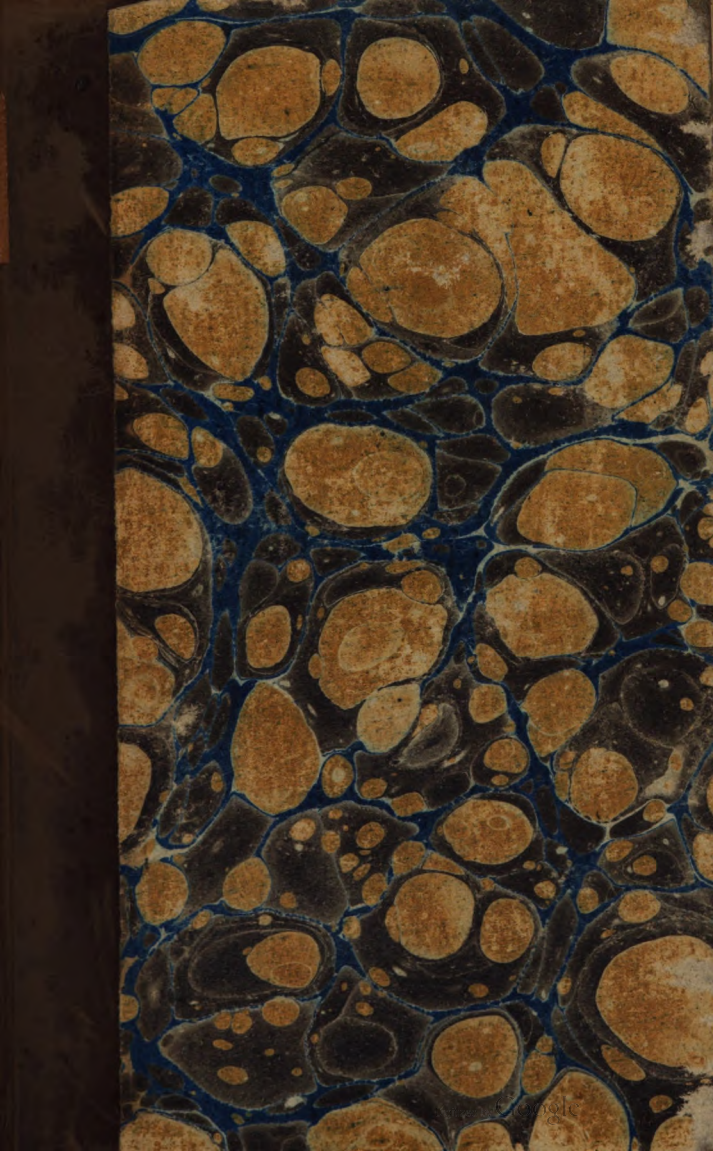
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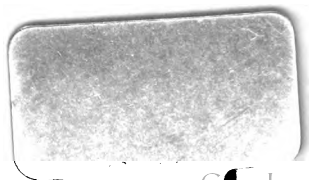
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43. 6.







**THE CLAIMS**  
**OF**  
**THE CHRISTIAN ABORIGINES**  
**OF THE**  
**TURKISH OR OSMANLI EMPIRE**

**Upon Civilized Nations.**

**PART I.—THE CLAIMS OF THE ABORIGINES.**

**PART II.—THE PRESENT CONDITION AND PROSPECTS OF THE  
OSMANLI EMPIRE.**

**PART III.—THE ASPECT AND POSITION OF THE MISSIONARY  
ENTERPRIZE IN WESTERN ASIA.**

**BY**

**W. F. AINSWORTH, F.G.S., F.R.G.S.**

**LATE IN CHARGE OF AN EXPEDITION TO THE CHALDEAN CHRISTIANS FROM THE  
SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE;  
VICE-PRESIDENT OF THE INSTITUT D'AFRIQUE, ETC., ETC., ETC.**

**LONDON:**  
**CUNNINGHAM & MORTIMER, ADELAIDE STREET,**  
**TRAFALGAR SQUARE.**  
**1843.**





## PART I.

### THE CLAIMS OF THE ABORIGINES.

THE claims of the Aborigines upon the protection of their conquerors is a subject which is lately beginning to attract much attention in Colonial Britain; and not less interesting and important are the claims of the uncivilized upon civilized nations.

In the practical operation of the first of these benevolent considerations, Great Britain stands at present far in advance of other nations. The generally destructive character of the intercourse between the more and the less civilized races, hitherto fatal to the weaker parties, has of late been considerably modified through good men's efforts in our own country. The most obvious examples of this kind are the attempts to abolish the slave trade from Africa to America, the more humane treatment of slaves, the partial abolition of negro slavery, and the attempts to legislate upon the conduct to be pursued in new colonies towards the aboriginal races.

In the second of these philanthropic emanations of a philosophic Christianity, the Germans, perhaps, stand at present among the very foremost of those who are pressing forward the most energetically to advance general civilization. It is not that other nations have been wanting in the genius that can make eloquent and feeling appeals on behalf of the less fortunate members of the human family, whose feebleness and deficiencies in the hour of struggle are mistaken by the prejudiced for essential conditions of

their existence, and whose adverse circumstances, which alone made their progress slow, have been too often aggravated by injustice. England, indeed, has reason to be proud of her Berkeley, her Granville Sharpe, and their followers, the Clarksons, Wilberforces, and Sturges; France may well boast her Gregoires and her Montyons; Spain her Las Casas; and America her Benezets, her Franklins, and her Penns: all men who have been engaged in the struggle of the oppressed of all ranks against the oppressors of all times. But in Germany there has been more steadiness of purpose and singleness of idea in the prosecution of the generous effort; and the genius of benevolence appears, from the number of its advocates, to be there no longer the gift of the few, but to have become a legacy to a nation.

From the days of Iselin, who in 1764 examined the idea that man has innate faculties capable in themselves of a complete development, to those of Gall, Spurzheim, and Tiedemann, a growing belief in this fact, which is now admitted as an incontrovertible position, has been gradually gaining ground, while a host of philosophic writers have been led from these physical facts to consider what also the future presented of promises in the amelioration of the condition of all mankind.

Three distinct schools arose out of the peculiar manner in which different orders of minds viewed the same general facts. Kant held that by nature man is capable of indefinite perfection, and that freedom is the grand means of attaining it. Herder demonstrated the perfectibility of man, from the relations of matter to intellect, and from the innate tendency of matter to improve; and he shews that mankind has advanced steadily from the earliest period of history. Schelling, Lessing, and others, have rested upon religion for the improvement of man; and thus Kant became the leader of what is called the political school; Herder, of the natural school; and Schelling, of the religious school. Infinite subdivisions, as might be expected,

took place in these great divisions ; and thus, for example, in the religious school, Gorres pursues Schelling's principles with Roman-catholic views, while Steffens reasons upon principles of protestantism.

But, debarred from all political discussion in the ordinary sense, the philosophies of history of the Germans, while they contain principles which most beneficially affect all uncivilized nations, and are often really well-reasoned schemes for the reform of societies, yet they want both a local and a practical application. The influence of philosophy in advancing schemes for human improvement has been very great indeed ; but with it, as the sole panoply, liberty would ever be refused to the slave, and protection to the emancipated negro or the persecuted Rayah would ever be impossible. Great changes in policy—and that in a policy which looks to ulterior as well as to immediate results—can alone effect these things, and help the oppressed in their fearful struggles ; and such changes come only through political discussion and political action.

It is unnecessary in the present day to advert to the fact that the Osmanli Turks have no other right to the great and rich countries, and for the most part formerly Christian, which they now rule over, than that of conquest. They are not the aborigines of the country ; they rose to power within that country, but they came from without, subjugating at first the Greeks, and then all the different races which people that vast empire.

In Syria, Arabia, and Mesopotamia, the subjugation of the oriental Christians by Muhammedanism anteceded the foundation of the Osmanli power. The abuses and corruptions which in the fourth and fifth centuries so grossly pervaded every Christian sect, and the endless religious controversies and contentions which convulsed the eastern world, if they did not suggest the idea of the general incorporation of all sects under one great faith to Muhammed, at least facilitated the overthrow of oriental Christendom.

Abou Bekr, the successor of Muhammed, published his resolution to spread the new doctrine through Syria at the point of the sword. The battle of Aiznadin, in July, 633, decided the fate of the capital. Emesa and Baalbek were taken the following year, and the Syro-Grecians made a last and ineffectual stand on the banks of the Hieromax. Jerusalem sustained a siege of four months. The conquest of Aleppo, A.D. 638, and that of Antioch which followed, completed the subjugation of Syria. The battle of Kadisiyeh and the capture of Al Madayn (Ctesiphon), rendered the Arabs masters of Persia almost to the banks of the Oxus.

In this sweep of Christianity before the Muhammedani Arabs, Christian nations were dispersed, and some even entirely lost: such was the case with the kingdom of Hira on the Euphrates. The Syro-Greeks retreated to the mountains and to Lesser Asia. The Syrians were dispersed, but are still to be met with throughout the East, from Lesser Asia to India beyond the Ganges. The Chaldeans of Mesopotamia retreated to the mountains, those of Susiana partly to India, and partly to the mountains. A few alone of each of these Christian races remained to brave the hostility of these conquerors; and while the Syrians still hung by the antique and venerated sites of Jerusalem and Antioch, the Chaldeans also clung to their episcopal sees of Edessa, Nisibin, Nineveh, and Baghdad.

Before the downfall of the Khalifs, the Turkish Sultans of the Seljukiyan dynasty had carried their arms into the Greek empire, and the defeat of Romanus Diogenes sealed the fate of Lesser Asia, and gave the first permanent footing to their future conquerors.

The Osmanli Turks made their appearance about 1226. The fall of Nicea and Nicomedia was followed by that of Brusa. The Osmanli Sultans crossed the Hellespont, and conquered Adrianople; and from the period of the fall of Constantinople to the present day (now nearly four centuries), has been one long usurpation, characterized

only by a fierce hatred of the conquered, by incapability of civilization, bad government, luxurious and indolent habits, fanaticism, pride, and ambition, which occasionally roused the Osmanlis to a spirit of foreign conquest, and above all, by a stern, unyielding, inflexible hatred to Christianity, and to all that emanates from it, or assimilates them to it.

#### THE GREEKS.

The great Christian races that at present exist under Osmanli Muhammedan rule, are the Greek, the Armenian, the Sclavonian, the Chaldean, and the Syrian. The Rayah Greeks constitute a large proportion of the population of the great cities in European Turkey, and at Smyrna. They are more numerous in the European peninsula than in the Asiatic, in which they do not extend much beyond the districts of Koniye and Kaisariye to the south, being succeeded by an Armeno-Christian population; but to the north they extend to Trebizond, the temporary seat of one of their later dynasties. Weary of the prostration of their religious head at the foot of Islamism, they have openly avowed their fealty to the Russian patriarch; and while the indignation of a national thralldom is too deeply felt to be even whispered abroad, yet it every now and then shews itself in local revolts of districts remote from the capital. At Stambol itself the annual festivals of the Greeks are superintended by an army of Osmanlis, under the command of the Serasker himself.

#### THE ARMENIANS.

In this country we are apt to form our own notions of an Armenian from the rich, intelligent, but deceitful banker or merchant of Constantinople or Smyrna; but they still exist throughout the Osmanli empire, and especially in their own long-lost country, under a very different aspect, although prostrated by so long a period of misrule and persecution.

It is remarkable that the comparative geography and annals of a country whose ecclesiastical history dates from the beginning of the fourth century, are among the least known to the learned and philanthropic of Europe. The sites of its successive capitals, Haicashin, Aragaz, Armavir, Tigranokert, Artashat, Chermesani, Erwandashat, and Valarshapat, are many of them not even known. There is no doubt, that were the literature of this remarkable people more studied, and the historical geography of the country drawn from its present obscurity, that a new state of feeling would be originated, for there is too much in the history of Armenia to interest the Christian and the philanthropist, not to awaken the most profound sympathy.

There are few countries that present more extraordinary pictures of the early struggles of Christianity against idolatry, in the memorable martyrdoms of the Vardanians and Levondians, who shed their blood in defending their church from the profanation of the fire worshippers and the followers of the Arabian prophet. Nor is there less material for inquiry, or for instructive exploration, in the remains of the dynasties of the Haic, the Arsacidæ, the satraps of Persia, of the Khalifs, and of the Greeks, the era of Macedonian rule, that of the Bagratian race of kings, or of the more humble Reubinian princes, moments of calm and comparative prosperity, swept across by the tempest-stroke invasions of a Gengiz Khan, or a Tamerlane, and the no less fearful devastations of a Shapur, or a Shah Abbas.

Notwithstanding the apparent prostrate patriotism of the Armenian of cities, the love of his ancient country, and the desire to see it re-established, exists in every bosom ; but it is a sentiment which he is afraid to breathe, and the conversions effected by the Jesuits from the ancient Armenian to the Roman-catholic church, has caused a division among themselves, for, like all seceders, the papists carry to a sad extreme their illiberal hatred of their more steadfast brethren.

Like the Greeks of Cappadocia, of Nicea, of Heraclea, and of Trebizond, clinging to their caverned dwellings, their rocky fastnesses, their lake-built city, and trading sea-ports, from generation to generation, amidst all kinds of political vicissitudes, Armenians are to be found, who appear to have dwelt on nearly the same spot from periods almost anterior to the historical era. How many travellers have not described the houses of the Armenian uplands, so precisely, to the very minutest details, the same now that they were in the times of Xenophon, three thousand years ago! Armenian towns, like Divriki and Arabkir, from time immemorial existing as such, are met with, isolated from all others, in the heart of Taurus; and their old and celebrated forts in Lesser Armenia, of Melitene and Carthiocerta, are still peopled chiefly by industrious people of the same nation.

The same races cover many of the richest plains of Asia Minor, with their cheerful villages and careful cultivation, and in no part of the country is industry to be seen carried to greater perfection than in the plain of Kharput, the ancient Sophene, in the rich district of Khinis, in the fertile vale of Sivas, or the gardens of Melitene, scenes only rivalled by the Chaldean corn lands of Adiabene, or the profuse luxuriance of the mountain acclivities, tilled by the industrious Greeks, on the shores of the Black Sea.

#### THE SCLAVONIANS.

The very greatest interest also envelops the history and fate of the Sclavonian and Celtic races, who, the former especially, constitute the greatest and most worthy portion of the population of European Turkey.

The Sclavonians are of the Indo-European family of nations. They are one of the primeval races of Europe, and were settled in these countries before the commencement of the historic era.

About the middle of the fourth century, the Sclavonian countries were visited by three successive irruptions of the

Celtic or Gallic nations. These drove before them the Slavonians of Pannonia and Illyricum, and even the Thracian nations settled in Dacia were also compelled to yield part of their country.

The migrations of the Slavonians from Russia began so early as the time of the Huns, and we find them accordingly settled in Roman Dacia, or in Wallachia, Moldavia, and Transylvania; as also in Zagoria, a highland district at the foot of the Haemus—the Bal Khan of the Turks. These, in 678, lost not only their independence, but their very name, which was changed into that of Bulgares, belonging to a people related to the Huns who subjugated them.

#### THE BULGARIANS.

The Bulgarians were converted to Christianity in 860. Constantine Cyrillus and Methodius, two celebrated Slavonian apostles, introduced letters among them, and gave them a Slavonic version of the Scriptures and a national liturgy.

The empire of the Bulgarian Slavonians, the capital of which was Pereslau, the ancient Marcianopolis, was overthrown in 971 by the united forces of the Greeks and Russians; after which they remained vassals of the former, and then of the Osmanlis, under whose bondage they still exist, although from the ties of church and neighbourhood, assisted by a constantly active and well-directed subsidarism, the influence of Russia is paramount.

The modern Bulgarian has been much calumniated. There is no doubt that he is often ignorant, and wants sobriety; but he is always plodding, industrious, and persevering; attentive to his business, domestic in his habits, peaceful in his manners, and there are among them those who would be an ornament to any nation.

#### WALLACHIANS AND MOLDAVIANS.

The names of Wallachia and Moldavia arose in the thirteenth century, when the descendants of the ancient



Celts quitted the mountains of Transylvania, where they had taken refuge during the great migrations in the time of the Huns, and made themselves masters of the government.

The Wallachians and Moldavians in the present day, as is generally known, have a nominal government of their own, pay tribute to the Porte, and are really swayed by Russian influence solely. It is an interesting fact, if the habits of people throw any light on the natural (as opposed to political) affinities of territories and the necessities of the soil, that every year the Transylvanians lead their flocks to pasture, on the southern or Turkish side of the Danube, and in that remarkable district called Tatarie Dubrug, and which is inhabited by Tartars from the Crimea, and not by Osmanli Turks.

The Sclavonians of Macedonia, Bosnia, Montenegro, Herzegovina, and Albania, have preserved their nationality alike under the Greeks and the Osmanlis.

#### THE SERVIANS.

The Servians are among the few that retain the domestic appellation of their race (Sirbia). They are descended from a colony which migrated from the country beyond the Carpathian mountains, or Eastern Gallicia; and hence the language is an intermediate idiom partaking of the Russian and Polish. The epoch of this emigration is supposed to have been between 634 and 638, and they have preserved their nationality in its full integrity down to the present day, having also partially emancipated themselves from the yoke of the Osmanlis, and being in the enjoyment of a government of their own, but in so small a principality naturally much influenced by neighbouring powers.

A loud strain of reproach, and not without some reason, has been indulged in, by the vindicators of humanity against the oppressors of the ancient aborigines of Europe, the Basques, the Gael, the Cimbri,—with their lands

seized, their language eradicated, and their very name almost lost before successive invasions,—the Finns pressed into the remote north, and the Lettonians and Poles cruelly enslaved by their pretended protectors and spiritual guides.

The crushed Slavonian races have an equally fair claim to interest. The occupation at one time of nearly half of Europe by these peaceful tribes is without a parallel in history. Providence itself seems to have befriended their peaceful intentions, for their conquests were not those of war or plunder, or to enslave men, but the acquirement of territory which they might convert by labour into a soil supplying abundantly the wants both of man and beasts; and it is sincerely to be hoped that futurity has in store for them the tranquil and free enjoyment, under a government of their own, of those countries which their long residence, hard travail, earnest perseverance, and domestic virtues, have given them the sole and indisputable title to.

#### THE CHALDEANS.

The Chaldeans, or Khaldis, called by the American missionaries Syro-Chaldeans, and by the Jesuits, Nestorians, are the existing remnant of the ancient Chaldean nation. Converted at a very early period to Christianity, they withdrew from the communion of the Patriarch of Antioch in the year 485 of the Christian era.

Their presiding bishop is the great primate of the east, who bears the title of Catholicos, and is considered as the head of the whole body, wheresoever dispersed.

After the destruction of Ctesiphon by the Arabs, the see was removed to Baghdad, where the patriarch continued to reside till 1258, when the City of the Khalifs was sacked by the Tartars. From Edessa (Urfah) and Nisibin the see was removed to Mosul, where it continued till the arrival of the Jesuit missionaries, who brought division into this most ancient church, and ultimately forced the

patriarch to retire, with his more steadfast brethren, to the mountains of Kurdistan.

Ever since that time, the pope, in order to strengthen his claims as patriarch of the west, has continued to give to the seceders from the Chaldean church, or the Roman-catholic Chaldeans, the title of Chaldeans, and he designates their country as Chaldea, as we have seen in a priest's ordination obtained at Rome ; while to the ancient church he has attached the name of Nestorians, not acknowledged by the Chaldeans themselves, but, strange to say, repeated by protestant and other travellers, who should know better, as Assemani, a Roman-catholic writer, himself acknowledges the fact.

In the present day, the Roman-catholic Chaldeans inhabit the plains of Mesopotamia and part of Persia. That part of the population which is under Osmanli rule reside chiefly around the site of ancient Nineveh, on the plain of Adiabene, at Baghdad, Kerkuk, Diyarbekr, &c. They are chiefly agricultural, industrious, and passing wealthy. They are under the government of a patriarch, who resides at Mosul, and of six bishops, whose dioceses are Amadiyeh, Jezireh, Sért, Diyarbekr, Mardin, and Kerkuk.

The Chaldeans proper are divided into tribes, some of which, as the Tiyari, the Jellu, and others, are independent of Osmanli or Persian dominion ;\* others, as the Berrawi, Nurwan, &c., are vassals or subjects ; as is also the case with other mountaineer tribes of the same nation in Armenia.

It appears from a prolonged observation by the author, and by the American missionaries, of the forms and ceremonies, as well as of the discipline of the Roman-catholic Chaldeans, and of the feelings both of the clergy and the laity, that the conversion effected by the papal missionaries

\* It is a curious fact, that no Kurd tribe in Kurdistan is absolutely and totally independent. The Tiyari Chaldeans are perfectly so.

has never been so deep as to modify the character and practices of the people to any great extent, and has always left their standard unimpaired ; there has been no change in articles of faith, no renunciation of the Nestorian heresy, no introduction of a new creed, and, indeed, no tangible and formal act of reception of the doctrines and usages of the Romish church.

With regard to the Chaldeans, strictly speaking, there can be no hesitation in pronouncing them, both from our own researches and those of the American missionaries, as one of the churches the least contaminated by superstitions and unscriptural doctrines of the east. They want the light of education and of a true knowledge of the gospel : isolated from the rest of the world, living in a difficultly accessible country, knowledge has rather retrograded than advanced ; and it is much to be wondered at that more errors have not crept into their forms and discipline. No Christian nation offers so fine a field to the true philanthropist for disseminating the advantages of a Christian education ; and no nation, for its simplicity of manners, its general morality and good conduct, its unfeigned piety, and its severed condition, is more deserving of the friendly communication and assistance of more favoured and more civilized countries.

#### THE SYRIANS.

The Syrians, properly so called, are a remnant of the antique church of Syria. They are very widely distributed, but chiefly in Syria, Mesopotamia, Kurdistan, Persia, and India. Under the Osmanli dominion they are most numerous in Northern Mesopotamia and in Kurdistan. They are chiefly agricultural, and very poor.

These people all belong to the same church, which separated itself in the year 518, on the death of the Emperor Anastasius, whose moderation or apathy had postponed a schism which various causes conspired to render inevitable ; and hence they are called by eccle-

siastical writers Syro-Monophysites. The Jesuits effected many conversions among these people, and by the same policy as they acted towards the Chaldeans, they distinguish by the name of Syrians only such as belong to the Roman-catholic church; while they designated the Syrians, strictly speaking, as Jacobites, from Jacobus Baradœus, called by the Greeks Zanzalus, a zealous defender of the Monophysite doctrine, and who was Bishop of Edessa in 541.

Besides these leading Christian aborigines of the country, there are several other sects sprung up from more modern innovations: such are the Maronites, in other respects a hearty, open-minded, and brave mountaineer race, who, after European fashion, shake hands with their neighbours. There are also in Syria several other sects, chiefly attached to the Roman-catholic church, besides other sects of less than doubtful Christianity.

## PART II.

### THE PRESENT CONDITION AND PROSPECTS OF THE OSMANLI EMPIRE.

THE future destiny of the Osmanli rulers of the aborigines of Turkey in Europe and in Asia is connected with three simple points :—

First, the progress of internal modifications to adapt the constitution of the empire, and consequently its capabilities and resources, to cope with the civilization of those around it.

Secondly, the accidental and artificial support which it may receive from European nations, in order to prevent the colossal growth of its natural enemy—the Russian empire; and,

Thirdly, its being able to keep in subjugation the greater intelligence and industry, the increasing numbers and awakening energies, of the Christian aborigines.

In reviewing the points which most affect the advance or retrogression of the Osmanlis, we shall adduce, first, such as are in favour of the continuation of the Turkish supremacy, and then discuss such as are opposed to it.

First in the list of favourable circumstances, and standing prominent over all others, are the modern ameliorations in civil and military government.

The reforms of Mahmud had their origin partly from the pressure from without, but still more so from the state of things within the empire itself; and they were carried through by a superior intelligence, and the indomitable firmness of the sultan himself. The empire was then in

a very critical state. Some of the most powerful pashas, as Ali Pasha of Yanina, and Daoud Pasha of Baghdad, had thrown off their allegiance. There was a deep dread of the Janissaries. Soon after their destruction, in 1826, and the establishment of the nizam, or regular troops, the Russians invaded the frontier. From the time that peace was concluded with this enemy, Mahmud did not cease to introduce improvements in all the branches of the administration: it is in the practical application alone that they have hitherto generally failed.

The civil and military authority were said to be separated at this early period; yet in the present day the highest rank that possesses only military government is a livah pasha, or general of brigade, formerly a pasha with one tail; while all rulers of the rank of ferik (pasha with two tails) or mushir (pasha with three tails) combine the military with civil authority, a combination long admitted by civilized nations as incompatible with a just exercise of authority.

The right of confiscation was nominally abolished, and this was anticipated to have the humanizing influence of saving rich Christians and Jews from being destroyed for imaginary crimes; but we have seen by the tragedy enacted at Damascus how far this is to be depended upon, and with regard to Christians it has only altered the manner in which extortion is effected.

Under the same reign military and naval schools and a college of medicine were founded at Constantinople; ecclesiastical reforms were permitted and effected among the Christians, by which especially the Armenians regained their patriarchal privileges which had been robbed from them by the Roman-catholic schismatics.

Side by side with Mahmud, the Pasha of Egypt was also marching onwards in his vast labour of reforming the population of the long valley of the Nile—a regeneration in which he in some things outstripped his master, but individual ambition destroyed all the advantages that

otherwise would have been derived from this promising state of things; the pride of independence begat rebellion and war; the spirit of conquest followed in the train. This was supported by extortion and monopoly, and then poverty and ruin came upon the before smiling lands of Egypt and Syria; yet so great a moral power had the old man raised to himself, and so real were some of the advantages arising from his ameliorations, that while driving him (the pasha) from his Syrian possessions, the powers could not venture to interfere with his claims to the vassalage of Egypt.

After the destruction of the Janissaries, the foundation of regular troops, and the partial adoption of European dresses, there came an administrative document, (*hatti scherif*), which was at once a charter and a boon, not wrung from a limited monarchy by a clanship of powerful barons, nor a compromise between a weak king and an imperious people, but the intelligent, free, and philanthropic grant of a ruler, supposed to be a despot, but in reality a monarch whose means of doing good are thwarted in every direction, and chained by inveterate customs, manners, religion, and prejudices. No greater nor more general mistake exists than that the Sultan of the Osmanlis is an all-powerful despot: he may be a domestic tyrant, if his turn lies that way, but his public acts are controlled by influences seldom appreciated in Europe in their true light. At present the independence—nay, the very existence—of the sultan depends upon the progress of reform, and yet that very progress, by establishing the supremacy of the Christians, involves the fall of the Osmanli power as much as to remain stationary does. Hence, there is a strong Muhammedan party, who contemplate every concession made to civilization in its true light; and thus, when the late capitan pasha gave up the fleet to Mehemet Ali, he was a traitor to his king, but not to his party, and he was to have been restored to power, when death removed him from the political arena.



The mufti and ulemas have only one feeling on such a subject. Most of the nobility, a large portion of the administrative power, and all classes and ranks of society among the true Osmanlis, have the same way of thinking. Hence the progress of the reforms contained in the hattı scherif have been, beyond the precincts of Constantinople, very slow indeed, and, generally speaking, merely nominal.

The "Commercial Treaty" which Great Britain had the merit of obtaining from the Sublime Porte, is a most prudent and efficient measure of defence and precaution, and was carried through under difficulties of no common order. This treaty really annuls that of Unkiyar Skelessi, if such, in its separate and secret article, was ever looked upon as practically and virtually in force. It is a general manifesto for the benefit of the whole commercial world, and on this account it has been looked upon with jealousy by the mercantile community of Great Britain and others, who would urge the country to war to overthrow a monopoly of any other nation, yet see a virtue in such in their own.

A penal code has been published, and it is to be hoped that, with the progress of intelligence, some men will be found to put its enactments in force; but such have not shewn themselves as yet.

The system of farming the different branches of the revenue has been prohibited, and tax-collectors have in some cases been appointed. This does not operate as yet, because the farmers used to pay in advance, and the collectors can only pay as the money comes in, while the government cannot afford to wait: it might do so, by admitting the sale of landed property to foreigners as legal. They have attempted to do the same thing by an issue of *assignats*, with a renewable interest, payable every three months; they have, consequently, a depreciated currency. These are, however, mere matters of detail in the amelioration of existing institutions, the progress of which is slow, unequal, and often null.

The new scope and character given to the foreign relations of the empire stand prominent among the tokens of improvement. Such cannot but serve materially to enlighten the minds of those who, by their influence and position, are best qualified to reflect them around upon the multitude. The individual tendency to adopt certain European habits and customs, now generally spreading through the empire, connects itself more or less with this order of considerations, but still more so with those of an increased communication with Europeans, arising from an improving commerce and greater facility of intercommunication.

The introduction of the arts and sciences, and the cultivation of knowledge generally, is also a characteristic of the times. Hundreds of Europeans are now employed as artisans, founders, mechanists, and engineers, throughout the empire. Science, at the same time, prospers. Osmanli youths now frequent the schools of Europe, while a host of instructors in military science, medical practitioners, teachers of languages, &c., spread themselves over the country. Schools for the perfecting these sciences, and more especially mathematics and navigation, have been long in existence. Steam-mills have been erected, museums have been established, libraries founded, and even the fine arts have not been neglected.

The gradual undermining of many inveterate prejudices, and the advance of the principles of toleration, are among the last of the important considerations which present themselves here. The majority of every man's sentiments and principles may, with much propriety, be denominated prejudices. They constitute at once our pre-judgment, our opinions, and our dislike to all that differs from what we have been accustomed to. They are received from parents, teachers, and associates, from peculiarity of rank or position in society, from the particular form of government and religion of our country, from partial reading, and from those numerous and name-

less causes and influences which give variety to life, and which impart a specific colouring to every man's character and destiny.

The mass of mankind, in almost every country, are actuated and governed by their prejudices. We, or none other, have a right, under existing circumstances, to look down upon or deride, as is so commonly done, the prejudices of the Osmanlis. Few men either reflect or reason for themselves. If their prejudices happen to be correct, they generally prove orderly and useful citizens and subjects. Many of the Muhammedan prejudices are essentially good ; they are strongly prejudiced against uncleanness, falsehood, deceit, and neglect of prayer. Can every so-called Christian say as much ? But the prejudices of the human family are not always either good or harmless, nor in favour of truth. The numerous totally dissimilar and contradictory political and religious systems which prevail in the world, and which command the affections of men, incontestably prove that the prejudices of the far greater proportion of our race are erroneous. These prejudices, too, are inveterate. It is scarcely possible to eradicate them from the minds of any considerable number ; and it is always dangerous to attack the prejudices of the multitude in an open and direct manner. Such an attack tends to bind them more strongly to their errors, or, if it should produce an opposite effect, the consequences are oftentimes much more deplorable. The prejudices of the Mussulman are founded on his religion, and are propagated through every little feeling and daily act of life. They constitute a part of every thought, accompany every movement, and are complicated with his whole existence. This is a proverbial thing. It is not a harmless prejudice ; it is one that is raised in a moment into a flame of opposition, and that carries in its front the fiercest of human passions—rancour, hatred, and revenge. The Muhammedan is not at the present day to be ap-

proached by attacking received opinions, but by exhibiting gradually the truth. Prejudices must not be stormed, but sapped at their very foundation. He must be most carefully allowed to have his own way; but a certain impetus having been given, care must be taken always to keep it up. Philosophy, science, and literature will lend their aid. He has himself—and it is a curious phenomenon to contemplate in the moral world—he has himself begun the great work of regeneration, and all the circumstances in which the Osmanli empire is now placed, and the absolute necessities which are entailed by the present state of things, will unite to compel him onward in his course, or to ensure his fall if the supremacy of prejudice should lead him to remain stationary.

The complication of European with Asiatic politics, and the gradual but almost certain return of commerce to its antique channels of communication, is a very important addition to these considerations. From this complication, a new era has commenced for the Osmanli empire, as well also as for that of the Persians, both of which will now be permanently influenced by European governments. It is, however, still buried in the womb of experience, whether these countries will rise in civilization and toleration to a point commensurate with what will be expected and demanded from them, or whether they must fall before the force of circumstances. There is now no stopping midway—they are both irrevocably connected with the stability of the present state of things, and constitute elements essential to the balance and repose of European nations. And while they thus constitute the bulwarks to warlike operations, great but peaceful changes keep going on around. The opening of the navigation of the Euphrates and of the Red Sea—the extension of our commerce throughout Western Asia generally—the numerical increase of our political and commercial agencies—the spread of education and of the light of the Gospel among

Oriental Christians, constituting as they do so large a portion of the community—will all have ultimately great influence upon the Muhammedan empire.

What are the points opposed to the regeneration of the Osmanli empire? is a question which constitutes our next subject of inquiry. The first and greatest is the various nature of its population. Osmanli Europe contains, according to Balbi, a population of 700,000 souls; and of this certainly nearly three-fourths are Christians, having no regard for the sultan, and equally little for Muhammedan laws, which are only enforced by power, and are upheld neither by religious feeling nor patriotism. Osmanli Asia contains, according to the same authority, a population of 12,500,000 souls; and, in the opinion of Maltebrun and of Bell, the Greeks and Armenians alone constitute three-fifths of the whole population. This is somewhat in excess; but if we apply it to all the tribes that are not Muhammedan—Armenians, Greeks, Chaldeans, Syrians, Druses, Maronites, Ansairies, Ismaelites, Yezidis, Jews, Rechabites, Wahabites, &c.,—it will be consonant with truth, and will leave the remaining two-fifths for the Arab, Kurd, Syrian, Turkoman, and Osmanli population.

#### OSMANLIS.

In speaking of the two latter races, it must be premised, that although they speak the same language, the Osmanli Turks, the Turkomen of the Asiatic peninsula, certain Turkish tribes in the Caucasus, the Nogays and Kirghese, and still more, the numerous families of Iliyahs in Iran, as well as the Tartars of European and of Asiatic Russia,\* differ from one another even in some material points of organization; some approximating in form of

\* As there are Caucasian and Mongolian Turks, so there are Caucasian and Mongolian Tartars. It is to the latter that Klaproth, Abel Remusat, Humboldt, and Balbi, give the name of *Tatars*, which has lately been assumed as always more correct than the etymology Tartar.

head to the Caucasian race, the others to the Mongolian and Tungusian character. It is not at the present moment of importance to discuss if the latter are descended from the Hiong-nu of the Chinese historians, and the others from more westerly nations : it will be sufficient to point out that in more recent times, when the Osmanli or Oguzian Turks presented themselves in the Asiatic peninsula, there was already a Turkoman or Seljukiyan dynasty established there ; and when, from a mere Bey of Shughut, Osman became Lord of Yeni-shehr, and Orchan sultan at Prusa, the sultans of Iconium and the lords of Karamania, like those of Kastamon, of Germian, and of Cæsarea, did not cease, for many generations, an hostility, which is still preserved, though silent, in the present descendants of these different tribes. A Turk is not a Turkoman, nor have the Osmanlis and the Seljukiyan ever been really cemented.

As far as Osmanli dominion is concerned in Europe, the Turks are strangers to a country which they have never totally subjected, and where they have been, to use the language of a modern geographer, for these four centuries past, rather encamped than permanently settled. A large portion of what formerly constituted Turkey in Europe is now almost independent, and a still greater is only vassal to the Sublime Porte ; and so strong has the feeling become on this subject, that Balbi and other geographers have foregone the use of the former appellation, and designate the whole of these countries as the Oriental Peninsula.

In Turkey in Asia, as in Turkey in Europe, the Osmanli race is singularly fallen off. If it were not that, as the dominant and ruling tribe, the traveller is constantly thrown in contact with them, and that, in virtue of their privileges as rulers, they usurp all the more prominent, more showy, and lucrative situations, and that they are also often large landholders, they would sink at once into insignificance.

The Osmanlis are, however, the rulers, governors, and administrators of this vast empire in all its details, filling up all the offices, (with some exceptions,) from sultan and mushir, ferik and livah, defterdár and mushtahár, mufti and sherif, mullah and dervish, mutsellim and kadi, effendi and katib, to kawass and nizam; but the army is not one-sixth part composed of Turks of the Osmanli race.

Besides being large landed proprietors, they are monopolists under pashas, and merchants in monopolies, which they obtain by favour or bribe.

They are proud as conquerors, bigoted as Muhammedans, luxuriant as polygamists, idle as fatalists; but the vitality and energy of character which obtained for them an empire is gone; it is even fallen in its innermost stronghold—their religion.

The Osmanli is easily known, although not distinguishable from the Turkoman, by his regard for everything with which Europeans associate their ideas of the truly Oriental character, their love of bright-coloured flowing garments, large turbans, and long beards; their haughty pride and persevering hatred of reform and of Christianity.

#### ARABS.

The Arab need not be described. In the present day, however, it is well to understand that the Bedwins are divided into innumerable small tribes, all congregated under two great divisions—the Anazeh, to the west of the Euphrates, or in Syrian Arabia; the Shamar, to the east, or in Mesopotamia and Babylonia. There is a blood feud between these two great divisions. Besides these there are many large tribes, who are partly fellahs or agricultural maëden or pastoral, or even live in towns or villages. Such are the Montific Arabs, the Beni Lam, the Beni Fackhal, and a host of others. The Bedwins are nearly independent, while the Fellahs often pay tribute at once to the Osmanlis and to the Bedwins. It is unnecessary to remark, that the Wahabites, and other great

tribes of the Arabian peninsula, in part subjected by Mehemet Ali, are in reality independent, or in a very ill-defined state of vassalage.

#### KURDS.

Next come the Kurds. It would take a volume to sketch the character and distribution of these bold and powerful, but irregular and predatory mountaineers. They occupy permanently nearly the whole of the mountain country which divides Turkey in Asia from Persia, and where they are independent or vassals to the Persian or Osmanli government. A few are also subject to the Chaldeans. They are dispersed over the mountainous districts of Armenia, the Taurus, and other Alpine districts of Asia Minor. They are vassals, and not subjects, and usurp certain rights and privileges which in places almost put the Osmanli in the position of their vassals. One of the widest evils is their winter dispersion over the pastures and districts tilled by the industrious peasant, and their summer occupation of territories from which, in many cases, they have expelled the regular occupants. One of their most remarkable privileges—more common, however, in Armenia than elsewhere—is the custom of intruding in winter into the homes of the villagers, who have to give up half a house and half a winter's provender of food and fuel, to those who have no claim but that of being the most powerful.

The Nomadic Kurds are, as we said, independent, or vassals; but the vassalage, like the Arabian, is of a very doubtful character. They exist as such, strange to say, in the very heart of the Asiatic peninsula. Such, for example, are the Reshwan Kurds, who extend from the neighbourhood of Suaz to that of Kaiseriye, and have depopulated whole districts; such are also the Kurds of Haïmanah, occupying great part of the country between Angora and Koniye; and there is another powerful vassal tribe, to the south-west of Keredé and Boli.



Before the battle of Nizib, Hafiz Pasha partly reduced some of the great tribes of the Taurus, as well as those of the interior. Among these were the Kurds of the Agha Tagh, near Al Bostan ; the tribe of Kiachta, renowned in Osmanli history ; the tribes of the Ali Tagh, or Mut Khan, in the Niphates ; and he carried his arms into the very heart of the Singar ; but on the defeat of the Turkish army, the Kurds rose again to a man, and harassed and plundered the Osmanlis during a retreat of five days through Taurus.

#### TURKOMANS.

The Turkomans, an antique pastoral race of much propriety of manners, and possessing many patriarchal virtues, are a more quiet and more prosperous people. Like the Kurds, they have seldom acknowledged a perfect subjection to any government in the east. Even Ibrahim Pasha, who disarmed many tribes of Kurds and Arabs, left to the Turkomans, like the Druses, their ancient privilege of carrying arms. A chief of their own tribe always collected tribute, and Achmet Bey left his own tribe on the plain of Antioch to collect yearly tribute from his Turkoman brethren on the plains of Commagna Cappadocia. The Turkomans are largely dispersed over the peninsula. The history of their brief attempt to regain nationality under Chapwan Oghlu, who ruled at Yúz Kát, is well known to English readers through Kinneir's travels.

The Pashalik of Adana was formerly a Turkoman principality, the name of which was Ramadan Oghlu : hence the Bulghar Tagh is sometimes incorrectly marked, on maps, Ramadan Oghlu Balakhar. It is still always a Turkoman Mutsellimship. From hence they are scattered over the peninsula as far as to the shores of the Mediterranean and the Propontis. In the fertile vales of the former Kings of Pergamus are now to be found the powerful ashirat of Kara Osman Oghlu.

The population of the villages in Lesser Asia is composed chiefly of Turkomans, Kurds, and a few Osmanlis, and occasionally of races of aboriginal descent, which cannot be discussed here. Many villages are Christian. In the other districts, the population varies with the country. Thus, in northern and central Mesopotamia, invariably Kurd; in the Jebel Tur and Adiabene, Christian and Arab; to the south, all Arab; in Syria, on the plains, Turkoman and Arab; in Lebanon and on the coast, very mixed. The Osmanlis are comparatively rare everywhere.

In the cities the population presents the same motley character, only that the Osmanlis are more numerous, but are almost always, if taken by themselves, surpassed in numbers by the Christians and native Muhammedan races; and although the Christians, Greeks, Armenians, or Chaldeans, according to the country, do not equal numerically all the Muhammedan races of any given city put together, still they always stand infinitely in advance of them in point of wealth, intelligence, and industry. There are, however, many towns essentially Christian.

To give an idea of the numerical decay of the Muhammedans generally, it will be only necessary to quote one example given by Mr. Farren, late consul-general at Damascus. This city, according to Balbi, has a population of 140,000. After Mecca, Muhammedanism thrives in it more than in any other city. The ascendancy of religious and ecclesiastical influence has been upheld by the sacred considerations which belong to its history, and is also upheld by the residence of a large body of scherifs, and that of many ancient and noble families. It is also visited annually by 30 to 50,000 pilgrims; yet, according to Mr. Farren, there were, in 1834, only 18,500 Muhammedans chargeable with the tax called *ferde*. Already, in 1835, this number was reduced to 14,500, and in 1836 to 12,840; making a diminution of nearly one-third in that part of the population.

The history and state of the religious sects and political

classes of Osmanli Asia, in reference to the present condition, and the combination of their future developments with European influences, would demand a much more extended illustration than is at all consistent with our present object. It is only necessary to insist upon three points, which prominently present themselves in this general view of the state of the population as opposed to the regeneration of the Osmanli government. They are the very incoherent and incongruous materials which exist to be worked upon; and which contain rather the elements of discord and misrule than the promise of a uniform, general, and sympathetic co-ordination in a great onward march of improvement; and secondly, the real and actual decay of the Osmanlis even as a tribe, still more so as a dominant power. These two considerations alone ought to be of great weight when we support a government and not a people, amid a variety of tribes, differing in language, religion, and interests. Next to this evil of a population thus constituted, and the third in the list—is the still greater one of their not being all in perfect subjection. There is not one of the subject or vassal populations, whether Arab, Kurdish, Turkoman, or Christian, which could not, if pitched against the Osmanli government alone, overthrow it.

The next unfavourable point is, the system of internal government, and the delegation of almost irresponsible power to a pasha (Mushir or Ferik). It is now several years since the *Moniteur Ottoman* and its allied organs at Smyrna trumpeted forth the ordinances which were to salary pashas, and to place them on a new footing, yet to the present day the system has only been tried in, I believe, one case. It is merely possible that the Armenian seraphs, or bankers, have no longer the power to sell pashaliks to the highest bidder; and to denounce the occupant when the original fund with interest is paid in.

The revenue of a province ought not to vary much, for the Porte generally affixes from previous custom what it

has to receive ; but as the pasha has for himself and his expences all that he collects above that, it may easily be imagined to what excess of extortion he is carried. A council, in which Christian bishops and merchants have a seat, has lately been added to the local governments. It can be easily imagined by what sad means liberty of thought or speech is taken from the members of this council. The talent of the old race of pachas is not so great, or, at all events, does not place them so far above the young talent of the present day, which is slightly imbued with principles of toleration and reform, that it should necessarily be continued to be employed, to the neglect of the latter, and to the disadvantage of the country. Such being the case, there is only one possible way of accounting for this continuance of the old system, which is, that the administration, having been induced by the promise of assistance and aid in their late difficulties, to give a charter which contains the elements of a greater degree of liberty to the subject than is generally considered to be compatible with the safety of Muhammedanism, they are obliged, while they make much ostentation of many practical reforms, more especially in monopolies at Constantinople, to keep those in power in the interior who they know will understand the nature of a document of expedience, and not regard its injunctions. It is a remarkable thing, that on the promulgation of the hatti scherif, in Ottoman Asia, I only knew of one pasha who signified his adherence to it ; this was Hafiz Pasha of Erzerum, and now of Belgrade ; but he is a Circassian, a man with few prejudices, too kind a heart for the people he has to deal with, and favourable to reform and amelioration. Old Ali, Pasha of Baghdad, Haji Ali, Pasha of Koniye, Suleiman, Pasha of Diyarbekr, laughed at it, or used epithets opprobrious to their royal master. Muhammed, Pasha of Mosul, had two men spiked, and left to die, the day he received the charter, to shew his respect for it, although the French embassy to Persia was in the city at the time. Their

late appointments have partaken of the same character. After the shameful defection of the army of Angora, the flagrant conduct of Izzet Pasha became so manifest that he was recalled. Was a young and enlightened reformer put in his place? No. The ancient rebel of Baghdad, Daoud Pasha, was dragged from obscurity to become mushir of the rich and important district of Angora. While at the commencement of the operations of the allies on the coast of Syria, Izzet Pasha was sent out as General-in-Chief, in order to counteract the tendency to liberal opinions which might spring up in the minds of the poor persecuted Syrians by their intercourse with Europeans. Repudiated by the allies, he was obliged to be recalled; and soon, from Mushir of Adrianople, became Prime Vizier. Can anything more be required to shew what are the real feelings of the Osmanli? We could bring twenty more appointments to shew, in the most decisive manner, that pashas and rulers of every degree only prosper in proportion as they can exhibit their skill in opposing the progress of European influence and of civilization, while they can simulate to be yielding to it, and to be marching onward in the progress of enlightened liberality and reform. The revenue of the capital itself is, at this moment, farmed out; new and more arbitrary distinctions have been drawn between Rayah and Muhammedan; the press has been almost annihilated; and the history of the proceedings in Syria attest, among a hundred other facts, how much dependence can be placed on the liberality of the Turks.

The next points strongly opposed to reform are religious prejudices; these are proverbially stronger among Muhammedans than among any other class of believers, taken generally. It is certain, however, that many strong prejudices have, with the progress of enlightenment, been assailed, and with success. Such, for example, is the blow given to fatalism by the introduction of quarantine, and the many minor points that daily affect the

same prejudices, as the sultan distributing his picture, the introduction of Frank costumes, &c. But far more portentous to the philosophic contemplator is the real decadence in the energy and vitality of the Muhammedan religion itself. The Rev. Horatio Southgate, in his able review of the present condition of the Muhammedan world, (*Travels, &c.*, vol. i., Introduction,) remarks, that if there are no longer any questions of theology raised among its doctors, or schisms tearing it in its bosom, it is because there is also no longer any energy or vitality in the system.\* Quiet may be harmony; it may also be death. The latter, or at least a deep decline, appears to be the case with the Muhammedan religion. Out of Constantinople, look at its fallen temples, its ruined colleges, its tenantless monasteries, and decaying sepulchral monuments; nothing indicates repair or renovation; nothing breathes but of a life just about to be extinct. One city, (Koniye, for example,) is an emblem of the whole Muhammedan world; one tattered dervish is an epitome of the Muhammedan religion. From Baghdad to Trebizond, from Van to Ismid, a traveller never saw in modern times a new jami or mesjid, and rarely any new specimen of art, beyond a common tombstone consecrated to religion. At Stambul alone the tomb of the lately deceased sultan for a time revived, in its gilded portals and marble splendour, an idea of antique prosperity. A terrestrial globe, to illustrate the extent of the Osmanli empire, is pedestalled at its gate!

The minor points opposing themselves to regeneration are the habits and manners of the people, which, in every direction, only lead to a spirit of bigotry, a want of self-reliance, and of general security. Such is their great indolence, arising from the dogma of fatalism, and which

\* "Even the desire to increase their numbers by gentle arguments," says Colonel Chesney, (p. 371,) "does not now prevail to a great extent among the Muslims."

scarcely allows them to till the ground, and then only just enough for their wants, which leads them to make no provision for the future, which enables them to disregard the approach of want or disease, and to watch with little interest the progress of rebellion or war. Such, also, is the absence generally of the advantages of education, founded on the belief that the Koran contains all the knowledge deserving to be acquired, the non-use of printing, the want of public spirit in the government, the neutralization of public influence on the people, the disunion of the national classes, the want of fixed laws, the restrictions on general intercourse, and last, but not least, the debasing practice of polygamy and the condition of the women in the east; the latter of which evils applies itself also, it is painful to say, to the Christians of the east as well as to Muhammedans. So important is this consideration, that the celebrated Heeren (*Man. de l'Histoire Ancienne*, vol. i. p. 30) has traced to this one of the principal causes at once of the extent and short duration of Oriental empires.

“Polygamy,” says Heeren, “introduced among all the great people of Asia, brings disorder in the constitution of a family, and renders the establishment of a good public administration impossible; for in substituting a domestic despot to a father of a family, it founds despotism even upon the habits of private life.” And who is there who ever knew an eastern, however polished by civilization, who did not in private ever and anon discover his inner nature by the brutality of his opinions or his conduct towards the gentler sex—a sex whose emblem in the poetry of the Osmanlis and Arabs is the graceful leaf of the Oriental willow, and who are, nevertheless, not allowed to pray with their lords and masters, who are scarcely supposed to enjoy with them the same futurity, and who are practically treated as if, instead of being represented by a frail and delicate leaf, they were sculptured out of hard and unfeeling marble. Poetry and fact, like philo-

sophy and legislation, religion and charity, theory and practice, though wedded by men's intelligences, do not in the east, more than in the west, always travel in pairs.

Neither Muhammedans nor Christians of the east can attain the liberality of sentiment nor elevation of heart necessary for brotherly love and universal charity, or to take an interest in the happiness of all people and all nations, till they have begun, in however small a degree, to reform at home, and learned to treat their mothers, wives, and daughters as companions and fellow-creatures, having the same feeling for kindness and unkindness, the same susceptibility for love or neglect, the same sense of right and wrong, the same faculties for intelligence, morality, and passion, as ourselves, only with a greater delicacy of perception, and a greater refinement in the exhibition and the use of all their faculties—a beautiful gift of Divine Providence to the female, that she may be meek and quiet, and thus temper the character of man.

It is evident, then, without entering into all the details which would be necessary to elucidate the points here thrown out as in favour of or opposed to the regeneration of the Ottoman empire, that not only the greater number, but that all those which will have most weight with any reasonable and unbiassed mind, are in the second category, or really opposed to that regeneration. The institutions, dogmas, habits, and accidents of population and prejudices which oppose themselves to the progress of reform are all of old standing, coeval with the rise, and likely to remain till the downfall, of the same dominating power. Reform has certainly made some progress. Old institutions have been invaded, some prejudices boldly attacked, but none have been really overthrown; while many circumstances of the most serious character exist as impediments to any change proceeding as far as would be necessary for the salvation of the Ottoman empire.

The first consideration with which we commenced, then—viz., the progress of internal modifications to adapt



the constitution of the empire, and consequently its capabilities and resources, to cope with the civilization of those around, will, in the long run, be evidently a failure, as it is in the present day ineffectual. The second consideration—viz., the support the empire may receive from European nations, is evidently quite accidental, depending on the views of an existing ministry, and not upon the progress of sound political philosophy ; but it is evident that, as far as it goes, it is our interest, as it is that of Austria and of France, to impede, as far as possible, the aggrandizement of the Russ by the fall of the Turk. But if the decline of the Osmanli is so palpable, and his fall so proximate, it will be asked, who is there to supplant him? and our thoughts immediately turn to the Christian aborigines of the country. Thus it is that humanity and policy point out at the same time the line of conduct to be pursued in the east, and which promises best to our interest, to general civilization, and to the progress of Christianity.

The most important suggestion that remains with regard to these considerations, and which has been laid once before the Parliament of Great Britain, is the necessity of giving protection to our protestant brethren in the east. The French, it is well known, have long since taken under their protection the Roman catholics of Turkey. It is equally desirable that the British should take the catholic church of the east under its protection. It may be advanced against this, that it would very nearly require the residence of a political agent in each of the great satrapies of Turkey : this is already nearly accomplished ; and in many cases there are two or three agents in one pashalik who had better be distributed among the head governments.

It might also be said that it would be constantly involving us in difficulties with the administrative of, at the best, only an allied power. The same statement might be made against the protection already given by the French.

But the fact is, that as all the protection at present demanded would only be against irregular and unjust taxation, extortion, and the forcible seizure of property, all of which are frequently exercised against the unfortunate Christian, and destroy his means, impede his industry, and annihilate his political existence, so, such an interference does not militate against regular taxation, and the fair and proper administration of the law between the sultan and his subjects. It is only, in reality, seeing put into execution what the hattı scherif has already promised ; and the British agent, in giving protection to the persecuted and oppressed Rayah, would, in fact, be seeing the laws of the empire carried out into their benevolent operation.

There is much reason for congratulating ourselves in the progress of the connexion that is daily growing more intimate through our agents scattered in the east. Its influence in the interior is felt every day more and more, and is extending in every direction. British agents take with them the wants and luxuries of civilized life, which are soon the subject of imitation : by the style of their houses, the decencies of their habits, the urbanity of their manners, their less paraded but more heartfelt religion, they influence a whole town in a much shorter time than might be supposed. It is, however, to be regretted, that the British agent is allowed to trade, and that he is not, like the French agent, put in a position to enable him to devote himself entirely to the real interests, which will always present themselves in his responsible situation. I am aware that it will at once be objected to this, that the prosperity of Great Britain depends upon her commerce ; but it certainly appears that the protection given by the agent would be quite sufficient to bring trade to any place where there is an opening for it, (and there is an opening for English goods in every pashalik,) without his embarrassing his duties, or imbibing prejudices or hostilities by trading himself.

The vast ultimate advantages that would accrue to the whole country by the political emancipation of its Christian subjects—the most intelligent and industrious of the Oriental population—in the cultivation of the land, the progress of the arts, the spread of education, and the rising in rank among other nations, would be a rich recompence to the age in which such a peaceful and philanthropic boon was granted ; and the triumph effected by it would shew itself as more extended and more durable than aught that was ever obtained by the arms of the Crusaders. It would no doubt lead also, ultimately, to the established supremacy of the Christian races ; but this subject, which so intimately concerns the more remote destiny of the Osmanli empire, and in which many European governments are already deeply interested, connects itself with, and shall be treated of, in considering the present condition and the prospects of the missionary enterprise in the East.

## PART III.

### ON THE ASPECT & POSITION OF MISSIONARY ENTERPRISE IN WESTERN ASIA.

It has almost become a proverb among philosophic minds, —philosophic in the Christian sense—that God's providence in the world is to go on overturning and overturning till it shall bring all into subjection to Jesus Christ. "Muhammedism unveiled"\* stands forth as almost an open way to Christianity. The Osmanli believes in Christ in virtue of his belief in Muhammed; but the same teacher of truth in what regarded the Messiah was an impostor in what regarded himself, and had the audacity, with sword and firebrand, to declare himself superior to the Son of God. A faith thus reared upon so vain a superstructure on truth cannot contain the essentials of great durability. Founded by an ardent enthusiasm, Muhammedism is deeply seated in the bosom of a still religiously enthusiastic people; it is upheld and sustained by all the common practices of life, identified with thought in all its forms, and propagated by observances and ceremonies frequently repeated in the same day. Yet amidst these circumstances, so favourable to the propagation of any dogmas when wedded to the same perpetual state of mind, the Muhammedan has begun to doubt and to inquire. No one personally conversant with a large class of Osmanlis but knows that many in the present day are deists, many disregard all doctrine as superstitious, and others doubt but that Muhammedism is founded solely on authority, and not on the omniscience of a universal Creator. A few incline even to Christianity, but dare not avow it; the most characteristic averment of a doubting Muhammedan is, that it is more natural for a person who believes in one

\* "Mahometanism Unveiled," by the Rev. Charles Forster. 2 vols. 8vo. J. Duncan. 1829.

prophet to increase in faith so as to believe in two, than for one who already believes in two to separate himself from the one and remain only with the other; in other words, it is easier for a Christian to become Muhammedan than for a Muhammedan to become a Christian: if a Mus-sulman give up his prophet, he must also give up that of the Christians, whom he is only taught to revere through the Koran, and he must become a deist.

But it has been opposed in conversation with Muham-medans to this, that it would be more philosophical to consider the nature, history, and characteristics of the two missions, than to believe in them both implicitly. If they do not coincide in this comparison it may prove advantageous to truth, to test, by the feelings of every man's bosom, which partakes most of the character of a divine legation, and which, on the contrary, has manifested itself in a manner most inconsistent with the idea we can form to ourselves of a merciful and bountiful Saviour. Such an argument is listened to with attention and quiet respect, and it is even often possible to insinuate that the Arab conquests have the character of a visitation of wrath, and that the propagation of Muhammedism bore the aspect of a scouring of barbarians, to cleanse their hearts for the reception of a more meek and humble, and a more pure and holy faith.

These circumstances, in the present aspect of Muham-medism, tend to shew pretty clearly that the dawn of a change has already burst upon a great empire, and that it will depend upon the civilized world, under the guidance of Providence, that the day that follows shall be a day lighted by the vivifying rays of truth, and not obscured by the clouds of infidelity.

The state of Christianity in the East must always be more or less favourable to the propagation of the truths of the gospel, and the nations who have seen the truth, although little practically experienced in its benefits, may still be rendered, by Divine Providence, important instruments in the hands of the enlightened. The Christians of Western Asia, except in the small community of mountaineer Chaldeans, nowhere constitute the rulers, nor are they the more extensive landowners in the country, but they are a class infinitely before any of the Muhammedan races for their worldly civilization. They are universally more intelligent, more industrious, and more prudent

than Osmanlis, Turkomans, Arabs, or Kurds. It is to be regretted that one cannot always say more moral; but the prostrate morality of the rayah has been the result of years of persecution, and constant exposure to the open and never-sparing contempt and scorn of his religious opponents and political master.

Laying for a moment the other Muhammedans aside, the Osmanli has been previously noticed as very sparingly and diffusely disseminated over the empire. As the descendants of the gradual conquerors of the soil, this race possesses very large territorial properties—whole towns and villages are sometimes included in a single bey's possessions; and so it is with vast tracts of land, far beyond their means and capabilities to superintend. Polygamy causes a constant decrease of population, and hence many towns are inevitably going to ruin; while the villages, and the fertile soil of miles of uncultivated lands, are overrun by nomadic races. The local examples which I could furnish of some of these positions are curious. From idleness and bad management, this race of antique beys—the nobility of the Ottoman empire—are oftentimes living in huge unfurnished palaces or mansions upon a pittance of some two hundred pounds a-year English, who at the same time are proprietors of thousands of acres of valuable and productive soil. Yet they are not wanting in the love of money—on the contrary; but the excess of cupidity in this, as in many other operations in the East, defeats itself. If a man farms a district and prospers, the bey enhances the value of the property so much that the labourer loses the benefit of his industry; at the same time his sons, just at an age to be useful to him, are forced away to the army, or, at least, enrolled in the militia. The despotism of a pasha renders the customary market a scene of legal plunder. The bey himself at length yields to the pressure from without; he has no heart to keep accounts or study the interests of his property. Fatalism and indolence unite with these to sink him into indifference; and he finally contents himself with his empty state, his harem, gaily caparisoned horses, obsequious servants, a few poor dependent relations, and a plentiful supply of pipes and tobacco.

This old Osmanli race of beys constitute naturally the mutsellims, kaiyah-beys, ayans, &c., local governors of towns, districts, and villages. Hence it is that the local

governor does not always pay much regard to a pasha's firman ; nay, if his politics lead him that way, as they are almost to a man opposed to reform, they will not care occasionally to shew their disrespect or indifference to a firman of the padishah himself ; and I have heard the Father of Kings treated with very improper epithets by these old gentlemen. Yet so great is their local influence, that it is found expedient to retain them, for, despite their prejudices, they are all Osmanlis at the bottom. Thus a pasha has lately been very judiciously appointed to the district of Mush, in Armenia, but he lives outside of the town, leaving that to a bey, whose family have governed the little town from time immemorial. In the city of Adana, the representative of the powerful family of Melangena Oghlu (a Turkoman family) has always been tolerated, both by the sultan and by Ibrahim Pasha, as mutsellim ; but there is always a pasha in the town to counteract his influence.

The same race fulfils the different offices of law and priesthood. They monopolize by the latter, to themselves and a number of poor dependents, the revenues of the Madressis or colleges, of the tombs or sepulchral chapels, which are objects of pilgrimage, and of certain imaums and imarets to which large bequests of landed and other property are very often made. It is true that these fall sometimes into the hands of a rapacious and irreligious pasha, but still these foundations are very numerous. Under the pretence of reading the Koran, a host of idle men are supported for life in large, although ruinous, edifices ; and as the demands of a dervish or a holy man are not extravagant, these establishments support a greater number than would be the case in many other countries.

But it is in connexion with government that this race still preserves its greatest development. The whole of the branches of service subordinate to the legislative department are in their hands ; the extreme of poverty makes soldiers of them ; but one degree above that is a mounted irregular, with brass-headed pistols in his bosom—a being who lives by a tolerated system of extortion. This man rises in rank to be a kawass, who is thief-taker, protector of the road, enforcer of authority, tax-gatherer, revenue-collector, or a mere subordinate in the pomp and pride of a governor's suite.

Then come the long list of secretaries (effendis, katibs,

&c.) which belong to the various offices in every town and district—the collector of capitation taxes, the registrar of property, &c., all down to the heads and subordinates of the *menzil-khan*, or post-house.

The same race is, however, also seen in the more common sphere of commercial pursuits. He not seldom, as a young man, puts on his best dress of red silk and striped gown, with a turban of large dimensions, pistols in his girdle, and a well-fed horse, and starts from his home to see the world, make his *haj*, or pilgrimage, and pay his way by his sales. For this purpose he takes with him the produce of his country—silk, madder root, yellow berry, or whatever is portable, with which he arrives at the chief town of the *pashalik*, where he disposes of his first property, and purchases another cargo of goods disposable to advantage at Constantinople, to which place all his thoughts are first directed. Here the sale of his horse and goods enables him to steam to Alexandria, (the Mecca itinerary has now lost its use.) He visits Cairo, where similar proceedings enable him to join the caravan to Mecca. If he survives and prospers, he will after that also visit Jerusalem and Damascus, and then the world of an Osmanli contains no further object of ambition. It often happens that the young Osmanli marries and settles *en route*. Few are those who fulfil all the ambitioned prospects of youth; some fail in their speculations, and are obliged to take up some service; but when they do succeed, and return to occupy a shop in the bazaar of their native town—with silks and satins from Brusa and Damascus, fringes of gold from Cairo, and shawls from Baghdad, while his own head is adorned with the turban of a pilgrim, and he is styled Haji Ali, or Haji Mustafah—he becomes a man of importance, to whom the others look as to an oracle, and the young Osmanlis treat with the respect which would once have been shewn to a Cook or a Mungo Park.

The Osmanlis do not extend their attention much to the manual trades; these they leave to Christians, with a very few exceptions, as pipe-stick making, confectionary, blacksmiths, &c. The description of shops which they like best are as salesmen of tobacco and manufactured goods.

Such, then, is the present condition of the Osmanli part of the population of Asiatic Turkey. The whole of the country, according to Balbi's estimate, contains, with its



dependencies, 12,500,000 souls, of which, at the most, two millions are of the Osmanli race. As they could not for a single day resist alone the revolution of any one of the vassal nations, so also are they no longer in the condition to resist the onward progress of a moral and religious revolution, which would soon be brought about were protection to be conceded by Christian governments to the industrious and intelligent classes of the country, whether Greeks, Armenians, Chaldeans, Maronites, Jacobites, or of any other persuasion. Colonel Chesney considers the Muhammedans to amount to between two-thirds and three-fourths of the population; yet he remarks (p. 371) that it may be reasonably anticipated that the followers of Muhammed will at length be absorbed in a Christian population, as a natural consequence of the more rapid increase of the latter.

It has been pretty generally admitted, since the fall of the Jesuits in Roman-catholic Europe, that the countries principally affecting pagan and Muhammedan nations are Great Britain and the United states. To these Divine Providence seems to have entrusted, in a great measure, the destinies of the unevangelized world, and we have seen how far attention to the state and condition of the Christian churches in the East is essentially interwoven with all such destinies as applied to the Osmanlis. If we do not bestir ourselves in this great labour, others most decidedly will. In the consummation of the design long entertained by the pope, of allying the Roman and Greek churches in hostility against protestantism, some writers (see *Lettre sur le Saint Siege*, par M. l'Abbé Lacordaire) perceive the only means of saving Europe from irreligion. An English writer has lately said—"It would appear that the occupation of Constantinople by Russia has found the most zealous supporter in the pope, for this blessed union of both creeds is to be sealed by an ukase of the czar, dated from the city of Constantine the Great." And to quote the eloquent appeal of Lord Lindsay, (*Letters on Egypt, &c.*) "The English are summoned to the breach. I do not think (I hope I am not speaking presumptuously) that much can be done openly as yet, but the way seems to be paving for a great moral revolution, in which we, as protestants, entrusted with the revealed will of God, must be active and zealous in our Master's cause, or woe betide us!

The eye of Providence is visibly watching this land—all Turkey, indeed; and as its counsels are unfolded in the progress of events, I doubt not we shall see cause to admire and praise the unsearchable wisdom of God, in preparing the way and affording the means for the revival of his gospel in the land it first rose upon."

The country for the recovery of which to the dominion of the sultan four of the great European powers conjointly took up arms, except in as far as a very small proportion of its population is concerned, cannot be said to be Osmanli, or even Turkish. The very language of the Turks is unknown in Syria. The population of real use to the country, and which confers upon it the greatest proportion of national prosperity, is incontrovertibly the Christian; and it behoves the allies who feel for the future interests of the country to consider well, in the measures which an enlightened policy will dictate to them for the rescue of the land of promise from its actual prostration by misgovernment and misrule, how far a more ample field given to the industrious operations of the Christians, by ensuring to them security of property, protection from extortion, as well as a proper exercise of their religious prerogatives, could possibly interfere with the objects held in view by policy only; while it will heighten so much in the eyes of futurity, the glory and the honour to be acquired by the political regeneration of a country of such dear and holy associations. The hand of God is visibly outstretched in the present juncture; his ways are unknown, his paths unseen; and the means which man proposes are very far from those by which He intends to accomplish his ends. But it is impossible to blind ourselves to the natural tendency which the current of events is leading to; and happy is he who finds himself among the selected, as an instrument, however insignificant, of contributing in any measure to so great and good a work.

It is quite evident, by the extent of the population, their superior intelligence, and their much greater industry, that in restoring to the Christian population a portion of their natural rights and privileges, we are doing that which is most favourable to the regeneration of the east; and that this ought to be the leading object and aim with the politician. But in what regards the effect which this

protection to the Christians will have upon the Muhammedans? All the advantages to be anticipated from it will not be obtained without first of all entering into religious communion with the churches of the East on the highest grounds of a benevolent and philosophic Christianity; and, secondly, by every possible means, improving the condition of the people by education, and by the dissemination of useful, moral, and sound information. As far back as the times of Charles the First, Chillingworth said, "Notwithstanding differences in things of lesser importance, there might and would be unity of communion, union of charity and affection, which is one of the greatest blessings which the world is capable of; absolute unity of opinion being a matter rather to be desired than hoped for." This subject has lately again begun to attract much attention in England. "The communion of saints in the primitive church," says Mr. Bevan, (on *Intercourse between the Church of England and the Churches in the East*, 1840,) "was kept up in the bosom of each particular church, and in the church at large. By the former, the Christians on each particular spot, or in each particular district, were kept together as one body; by the latter, the Christians throughout the world were united in one."

The high objects of missionaries employed on such a service must strike the mind at once; it is no longer the self-sacrificing and arduous labour of converting the heathen; it is not the amiable and devoted task of teaching the young Christian; it is to establish a friendly relation between churches too long alienated from one another,—to bring about personal relations between the successors of the apostles in countries geographically remote; and every theological student knows how advantageous this has been in bygone times both to the diffusion of religion, the progress of literature, the welfare of nations, and the preservation of peace. It is a new event to see the churches of the West seeking for intercourse, friendship, and intercommunion with the long-neglected churches of the East; but if taken in connexion with the reference it remotely bears either to the ultimate supremacy of those churches in the now Muhammedan empire of the Osmanlis, or to the conversion and overthrow of Muhammedism in one of its greatest strongholds, it is one of

those signs which point out that we are on the eve of a great moral dispensation of mercy to the nations of the East.

A circumstance which tends very strongly to increase our confidence in the proximate regeneration of the East, either by the revival of Christianity, by the re-establishment of Christian supremacy, or by the conversion of the Muhammedans, is the establishment of Protestant sees in the Mediterranean and at Jerusalem—thus bringing the hierarchy of the West in contact with their brethren of the East. Certain steps can be undertaken, and various measures pursued by such high dignitaries of the church, which are not easily accomplished when unaided by authority. The episcopal dignity of any one church is recognised as the same by all other churches who have not placed one prelate over all others in power and authority. The bishops of the Greek church, those of the Chaldean, Armenian, and Syrian churches, that are not Roman-catholic, recognise the authority of a protestant bishop. The missionaries of the American episcopal church would second his philanthropic exertions. Missionaries already labouring on the coasts will soon penetrate into the interior, and will carry glad tidings from the church; and there is much reason to hope that, with more extended and vigorous efforts, the baneful influence of politics, which weighs so heavily on the Greek and Armenian churches, but which is happily unknown to the patriarch of the Chaldeans, will one day yield to the triumphant generosity of true Christianity, and that a large portion of the churches of the East will enter into friendly and religious communication with the Church of England. A design, perhaps now unacknowledged in the event, becomes clear in the history; and the providence of God, lost in the din of war, will then shine more brightly than the glare of arms.

As it has been said that there are stars so distant, that though their light has been travelling towards us ever since the creation, it has never yet reached us, so there are meanings in God's dispensations, a light in events long past, which, through our imperfection of moral vision, or the thick medium through which we have to judge, may not yet have broken upon us, and may not, indeed, till far in the bosom of eternity. The mean-

ing of the brazen serpent in the wilderness was not seen till the Son of Man was lifted up on the cross; the purpose of David's education as a shepherd was not read till the publication of the Book of Psalms. There was a meaning in that three years' drought and famine in the time of Elijah, in the reign of Ahab, in the land of Judea, not known even to the church of God till the general epistle of James, after the crucifixion of our Saviour. An event like that of Bunyan's imprisonment for thirteen years had a meaning that could not be seen by that generation, indeed is but beginning to be known now, after the translation of the "Pilgrim's Progress" into more than twenty languages. An event in a still greater cycle of dispensations, like the banishment of the puritans to America, had a meaning which we are now only beginning to comprehend. And lastly, circumstances like those which threw the key of the Mediterranean into the possession of a Protestant power, did the same with Malta—the bridge between the Oriental and the Occidental world—and, finally, opened one of the antique gates of Christendom to the same nation, can only be understood when those future events have begun to march by in succession, for which those previous steps of God's providence are so evidently taken.

It may be thought by many that the differences in doctrines, discipline, and worship among the churches of the East, and between them and the protestant episcopal church, will establish an insuperable barrier to all friendly communication; but this is not the case. The standards of doctrine in the East are the Scriptures; and for discipline and worship, their practical resources are the traditions of the present churches and also primitive tradition—that is, the canons of the primitive church and the consent of the early fathers.

The excesses which occasionally disfigure every theological controversy will, however, it is to be hoped, disappear before the enlightened and pure philanthropic desire for a general intercommunion of Christians; and happy would it be if peace to the whole earth was ultimately secured by such an intercommunion. If the example of the primitive church and of tradition lent its weight towards effecting some few approximations which have hitherto been considered insuperable, they surely

ought not to be hastily rejected. To effect this great object, some concessions would be required to be made on both sides, and when their worst superstitions could be evidently shewn to the Eastern churches to be condemned both by Scripture and by antiquity, they will stand corrected by an appeal to authorities sacred in their own eyes. In such intercommunion it has been truly said, "Let it be our endeavour not to make them abandon their rites for ours, but to induce them, if they have erred, to rectify their errors themselves in the only regular manner in which they can be rectified—that is, by their bishops and clergy in council assembled."

After friendly communion between the heads and learned doctors of the churches, comes next in importance towards the future welfare of Oriental Christianity, and the further development of the dispensations of a Divine Providence with regard to the Muhammedans, the teaching and education of a rising generation. It is much to be regretted that this subject, more especially in connexion with the glorious futurity to which it is allied, has hitherto attracted so little attention. It is certainly highly desirable that an enterprise of this kind should be undertaken on a scale commensurate to the vast field which presents itself, and to the rich reward held out by the regeneration of our brethren inhabiting a land so peculiarly consecrated to our fondest love and affection.

The Christian population of most of the towns and cities, and of all the villages, in Osmanli Asia, have as yet never enjoyed the advantage of a liberal education founded on the truths of the gospel. The native Greek and Armenian schools confine themselves to reading, writing, and a little arithmetic. They read from the New Testament, but the meaning and sense of the subject is seldom explained; and scholars, like the priests themselves, mumble through the holy writ without waiting to understand, or caring if they are understood by others. This evil is akin to that most faulty part of the system of Romanism, which gives the Bible to be read in a dead language, or which chants and reads prayers in the same, and also in a manner quite incomprehensible to the congregation. This irreverent slurring over of God's word is not only common to the Roman-catholic Armenians, Chaldeans, or Syrians, but also to the Armenians, strictly speaking, but called schis-

matic Armenians by the Roman catholics; to the Chaldeans, strictly speaking, called Nestorians by the Roman catholics; and to the Syrians, strictly speaking, called Jacobites by the Roman catholics.

It was the policy of the popish church, on taking these ancient churches from the sway of their own antique and revered apostolic succession—the successors of Nestorius and St. Gregory, of men who had fought under the banners of Christianity at Jerusalem and Antioch, at Artaxata and Anni, who were born in the land of Christ and his apostles, and who were themselves among the fathers of the church—to enhance the value of the conquest, and to heighten the pride of a bishop of the Western church, by the pretended submission of the whole Eastern church to his self-assumed authority. Hence, these ancient denominations of an almost prostrate Christianity were attached to the seceders to the Roman church, while only a by-name and a false title were left to the followers of churches sanctified by age and unsullied doctrines. It would be a scandal to intelligence to ask who is most entitled to the name of Chaldean, Armenian, or Syrian? the followers of the ancient or of the new faith? No protestant could hesitate for a moment in his answer, yet travellers continue to perpetuate in their works the calumnious epithets propagated by jesuitical vanity. Happy is it that the churches in question possess yet their bishops, firm in the faith of their ancestors, and glorying in their own uncontaminated apostolic succession. At the period when such vast defections took place in the churches of the East, the Anglican church, which has now taken the lead in the work of missions, was then unknown to these most interesting and remarkable nations. In seceding from the faith of their ancestors, these poor people were taught that they were adopting that of the whole European church;\* and now that they are beginning to know better, it remains to be seen if a pious and philanthropic people will not grant them that protection and that assistance which

\* A remarkable proof of this presented itself to the Chaldean mission, on which occasion many priests were met with who were quite ignorant of there being nations, still less powerful and great nations, in the West, who owned no allegiance to papal power and authority.

their forlorn and persecuted condition so well entitles them to.

Nothing appears more certain than that the trial has been given to the Romish church in the great labour of conversion, and that it has been found wanting. It was not apparently within the cycle of events preordained and predestined by God's providence, that a church influenced by an ambitious spirit of aggrandizement should be the instrument of the great religious revolution yet to be effected ; and it remains still to be seen, if it is reserved for a church which professes to hold the truth in freedom and purity.

The language usually held upon this subject is somewhat as follows :—Nations have been training up and disciplining for God's purposes ; and protestant England, in which a greater spirit of liberty and knowledge prevailed than anywhere else, was the first sanctuary of this progressive improvement. The principles newly revealed at the Reformation were clothed with power of language, and dwell richly in the English mind. The whole compass of divine truth was investigated by English theologians ; men of the profoundest learning and the deepest piety at once combined their powers upon it. A body of speculative and practical theology grew up in the seventeenth century, such as could not be surpassed ; and for the accumulation and circulation of all this wisdom, and for carrying out the great purposes connected with the Reformation, the providence of God revealed to the world the art of printing.

A great source of power, and a striking indication of providence, is the widely-spread prevalence of the English language. The students of the missionary seminary at Basle call the English language the missionary language. The British empire, with dependencies, now comprises 4,500,000 square miles. The Roman empire, at the summit of its glory, is estimated by Gibbon to have extended over 1,600,000 square miles ; add to this, that the language of that great protestant nation, the United States of America, is also the English.

The invention of steam engines, and the perfection of steam navigation, have gone far towards diminishing distance ; and may be considered as providing new facilities to carry labourers and materials all over the world. If the



first steamer that entered into the Mediterranean sea was the prophet of a great revelation, how much more so was that which first turned its noisy paddles on the broad and silent current of the river Euphrates—moving like a vision of future glory through the very heart of the land of biblical history and of divine revelation? \* Dispensations, of which the meaning cannot be seen at the present moment, occurred to the first enterprise of this kind; but, through Divine Providence, the navigation of the river has been continued, and there are now four boats ready to carry civilization, and be the messengers of peace and joy in those antique countries. And it is a remarkable thing in connexion with the progress of a wise dispensation, that almost all, if not all, the officers connected with that enterprise, are of a pious turn of mind; and are anxious and ready to assist in forwarding the great work of the enlargement of the kingdom of Christ.

Throughout the whole extent of what was once Rome's empire, the facilities of communication are, in the present day, greater than they were in the proudest state of Roman dominion.

The power of the Koran is diminishing; and a breach is made in the influence of the false prophet, by every step taken by the sultan to assimilate his people to the manners of the Occidental world. The obstacles that prevent the access of divine truth to their hearts, and its power over their consciences, are gradually removing. In all political movements in the East, whether of peace or war, God's purposes are working—there are great signs in the complication of Oriental with European politics, and in the advance of the spirit of toleration, just at the time when so many interior changes in manners and feelings, preparatory to the reception of the gospel in the established supremacy of Christian nations, are going on.

The struggle in the Oriental world, it is acknowledged on all hands, must be one of intense interest, were it only for the remarkable fact, that the Osmanli empire comprehends nearly the whole scene of the transactions recorded in the Scriptures. How different the feeling and the manner in which these scenes, the monuments and

\* The Chaldean expedition, it is to be remarked, sprang as a first result from that to the Euphrates.

proofs of God's wrath, are approached, with the strong hopes founded in the same God's assurances of mercy, to what they were in the times when the armed bands of Christians came by force to fulfil the predictions of the Deity!

Those who, in the present day, are united in the glorious labour of preparing the way for the Lord, no longer appeal to arms; nor do they strive with one another in the romantic enterprise of preaching the cross to all nations. They rest humbly satisfied with teaching—pouring out the Spirit of God in schools for the young, when most susceptible of imbibing the truths of the gospel, and best calculated to assist afterwards in their dissemination; while others, profiting by the advance made in biblical literature, the increase of light thrown upon the Scriptures, the revived study of the primitive fathers, and with the depth and richness of the now-existing mines of theological wealth that have grown up out of the Reformation, are labouring towards establishing intercommunion between the oldest and the most recent churches of Christendom.

Such, then, are the prospects presented to protestant nations, of a new futurity being about to unfold itself to the East. It is not our object here to enumerate the means which are at this moment employed in this good work by the great protestant nations. Such a picture would be a painful one. America has, however, hitherto been far in advance of Great Britain. This young and energetic country seems to anticipate that this great task will still remain with it to fulfil. Its institution at Athens counts upwards of 600 pupils—teachers go abroad from it—and new branch establishments are yearly formed. The good done is inestimable. The mission at Urimiyah, among the Chaldeans of Persia, is one of the most perfect and efficient in the East. Missionaries from the American episcopalian and congregational churches are toiling laboriously and steadily, at Constantinople, Smyrna, Beirut, Trebizond, Erzurum, Tabriz, and other places. Teachers are also gone to Mosul, and among the Chaldeans, from the American congregational church; and a mission, which cannot but be productive of high advantage, is about to be established among the Syrians of Mesopotamia.

England, within a very short time back, has, however, begun to make a still more portentous appearance. The

appointment of bishops to the Mediterranean and to Palestine holds out the most extraordinary promises. The mission to the Chaldeans of the Society for Promoting Christian Knowledge has been followed by the sending out of an able and accomplished member of the church to those most worthy people. A protestant church is building in Jerusalem ; another has been consecrated at Athens, and the condition of the Syrian Christians is daily awakening more and more interest and attention, as is more particularly evidenced by the formation of such societies as the Syrian Education Society and the Syrian Medical Aid Association. It is to be hoped it will be the same with the neglected but honest Chaldeans. The influence towards a better state of things is beginning to shew itself in government appointments—as, for example, in the character of the persons appointed to the vice-consulates of Jerusalem and Mosul ;\* and it is to be hoped, and earnestly prayed for, that the present very opportune moment of effecting so much towards the regeneration of Oriental Christianity, by the means proposed—by protecting, teaching, and elevating the character of the people—will not, through the goodness of Divine Providence, be lost to this favoured country.

\* Agents exist in the present day at Erzurum, Trebizond, Batum, Kaiseriye, Samsun, Brusa, Smyrna, Baghdad, Basrah, Mosul, Damascus, Aleppo, Jerusalem, Beirut, Alexandretta, Adalia, and Tarsus ; six of these are not seats of Mushirs, while the Pashaliks where the Christians have no protection are, Angora, Sivas, Koniye, Kutayeh, Aidin, Adanah, and Dyarbekr. Several of these could be filled up by removals from superfluous posts, as Batum, &c. ; others, as Kutayeh, are well protected from Brusa, Adanah from Tarsus, Aidin from Smyrna ; and Sivas and Dyarbekr could be united under one protection, emanating from Malatye or Kharput. It is gratifying to know that it has been lately announced by high authority in the British parliament, that these consular agencies are no longer to be entrusted to those whose claims have hitherto been too frequently, mere want of commercial success.







